(b.) A portion of the urine is to be placed in a test tube, and treated as before. If much bile be present, a bluish-green colour at first appears. This is succeeded by various shades, until the play of colours terminates in red.

2. *Heller's test* consists in adding to the suspected urine a few drops of a solution of albumen, and, after agitation, a little nitric acid is added. If the colouring matter of bile is present, the flocculi of albumen which are precipitated will possess a dull green or bluish colour.

Not unfrequently, the albuminous flocculi, when thrown down by nitric acid, are more or less coloured in consequence of the action of the nitric acid on the colouring matter of the urine (uroxanthine). The colour is sometimes reddish, sometimes of a bluish colour. This change is not unfrequently observed in albuminous urine; and Dr. Basham considers it a condition of very unfavourable significance, and states that he has met with it most frequently in the acute forms of renal disease (*On Dropsy Connected with Disease of the Kidneys*, p. 48). This reaction must not be mistaken for that dependent upon biliary colouring matter.

3. After exposing urine to the air for a day or two, crystals of triple phosphate are formed, as is well known. If bile pigment be present, these crystals have a yellow tinge (Hassall, *The Urine*, page 27).

The three tests just described enable us to detect only the colouring matter of the bile.

4. In urine containing bile, the precipitate produced by the addition of acetate of lead has a yellowish colour.

For Detecting the Biliary Acids.

5. *Pettenkofer's Test.* If albumen be present, this must be coagulated, and separated by filtration. The urine is to be treated with about two-thirds of its bulk of strong sulphuric acid, which is free from sulphurous acid, adding the acid drop by drop, to prevent the temperature rising much above 100°; a little sugar or a drop or two of syrup may now be added to the mixture, and in the course of a minute or two a violet tinge will occur if bile be present. This test is not perfectly satisfactory, since it is very easy to obtain a reddish colour by the action of the acid upon the sugar if albumen and no bile is present; moreover, oil of turpentine, oil of lemons, and of cloves, with other substances, yield similar results. In all these cases, however, the colour is not bright like that produced when bile is present. The action of the sulphuric acid on the sugar alone produces a brownish-red, but this cannot be mistaken, as the colour is very different from that developed by bile. I recommend everyone to become familiar with these colours, by going through the experiments for himself by daylight with a diluted solution of bile.

The method of applying this test has been modified by Dr. Felix Hoppe, whose plan answers exceedingly well, and is so delicate that the smallest quantity of biliary acid can be detected with the greatest certainty. The urine suspected to contain bile is to be treated with excess of milk of lime, and boiled for half an hour. The clear fluid obtained by filtration is evaporated nearly to dryness, and then decomposed with excess of strong hydrochloric acid. The mixture is to be kept boiling for half an hour, and the acid is to be removed from time to time, to prevent the spurting which would occur if the mixture became too concentrated. When completely cold, the mixture is to be diluted with from six to eight times its volume of water. The turbid solution is to be thrown on a filter, and the resinous mass washed until the water runs through quite colourless. The insoluble mass is next to be dissolved in spirit containing 90 per cent. of real alcohol, decolorised with animal charcoal, again filtered, and evaporated to dryness over a water-bath. The yellowish resinous residue is pure *choloïdic acid*. By warming it, it emits the peculiar musk-like odour. It is to be dissolved in a little caustic soda and warm water, a little sugar added, and three drops of concentrated sulphuric acid are allowed to fall slowly into the mixture. The resinous acid is at first precipitated; but afterwards the flakes adhering to the glass are slowly dissolved by the addition of more sulphuric acid, and a perfectly clear fluid, of a beautiful dark violet colour, is produced. (*Virchow's Archiv.*, vol. xiii; *Archives of Medicine*, vol. i, p. 346; Abstract of Kühne's Paper on *Icterus*, by Dr. G. Scott.)

6. *Evidence of Bile Obtained by Microscopical Examination.* If the urine contain any epithelial cells from the kidney, as is usually the case, microscopical examination of the deposit will at once show the presence of bile, as the cells have a bright yellow tinge. The existence of this tinge proves conclusively the presence of bile colouring matter; but its absence cannot be

regarded as satisfactory proof of the urine being free from bile. In cases of kidney disease, when bile is present in the urine, the casts, when examined in the microscope, are seen to have a deep-yellow tinge.

[To be continued.]

Original Communications.

ON THE PREVALENCE AND SEVERITY OF SYPHILIS IN THE BRITISH ARMY; AND ITS PREVENTION.

By GEORGE R. DARTNELL, Esq., Inspector-General of Hospitals, H.P.

THE perusal, in the BRITISH MEDICAL JOURNAL of 25th February last, of a report of an interesting paper by Mr. William Acton, on the "Rarity and Mildness of Syphilis amongst the Belgian Troops quartered at Brussels, as compared with its Prevalence and Severity amongst the Foot Guards in London", induces me to offer a few observations on the prevalence of syphilis in the British Army, and its possible prevention or mitigation.

From the opportunities afforded me by a service of upwards of thirty years as a medical officer in the army, I am enabled to endorse the statements of Mr. Acton as to the frightful extent to which not only the Foot Guards, but the whole military force of the empire, is paralysed by this foul disease; and to express a decided belief that it is, to a certain extent, preventable, or at least capable of considerable mitigation.

I am not in a position now to refer to documentary or statistical evidence to prove the truth of this assertion, or to shew the actual extent to which syphilis prevails in the army generally, or its comparative prevalence in the several commands at home and abroad, and in the different arms of the service; nor is this necessary to my present purpose, for the fact is well known. It is sufficient to state that a very large proportion of our best and most efficient soldiers are constantly confined to hospital, at heavy pecuniary loss to the state, and loss of efficiency to the army; while considerable numbers are annually lost to the service altogether, by deaths and invaliding, from this loathsome disease. In the large garrisons of the United Kingdom, this is especially the case; and the great depôts for recruits, such as Chatham, are the fertile hotbeds where syphilitic disease is sown broadcast amongst the young soldiers. Many of these poor fellows carry abroad with them the seeds of the disease, either undeveloped, or but partially eradicated by a short treatment in hospital, to be germinated under the debilitating heats of a tropical sun, unfolding, at the same time, the hereditary and previously hidden horrors of scrofula and phthisis. Numbers of such unfortunates perish annually in our colonies and India; while I have seen many, in the General Hospital at Chatham, brought back as invalids, wasted to skeletons by the frightful complications of these terrible maladies—the most wretched, miserable, and loathsome objects that imagination can depict.

As a means of checking the spread of venereal disease in the army, Mr. Acton suggests that "all parties concerned should offer an asylum and cure for the women who disease the soldiers", and states that the Admiralty had very wisely voted £1800 for building wards at Portsmouth for the treatment of prostitutes, and £500 a year for "the present maintenance of the system". This is certainly a step in the right direction. The only wonder is why the experiment was never tried before; and I cannot conceive an objection to the plan being extended to all the large garrisons and camps in the kingdom. The expense of such small hospitals would be more than met, I am confident, by a saving in the two great sinews of war—money and muscle—from resulting health and efficiency to the army. There are persons, no doubt, who would raise objections to this system, as tending to the encouragement of vice, and a premium on prostitution. Such persons, however, might be reminded that these hospitals would open a new field of labour to the pious and philanthropic, who would here meet many of the unfortunate fallen only too happy, on the bed of sickness and suffering, to listen to the soothing words of advice and consolation, and to be led, by an awakened sense of their sin and degradation, to return from the paths of vice to a life of repentant innocence, renewed in soul as well as in body.

At the period of my service in India, a lock hospital existed in most, if not all the large European garrisons; and possibly

does so still, for aught I know to the contrary. These little hospitals were usually in charge of a military medical officer, with an intelligent native doctor acting under his orders; while the loose females of the garrison were under the strict surveillance of the police. On one day in every week, they were compelled to attend at the hospital. Here they underwent a medical inspection, and those found diseased were retained for treatment, while any who attempted to evade the regulation were taken before the presiding magistrate, who peremptorily ordered their immediate expulsion from the cantonment, with their heads shaved—a sentence carrying with it a moral disgrace which effectually prevented their return. When a soldier was found affected with any venereal complaint, he was called on to point out the female from whom he supposed he had contracted the disease, and she was immediately taken by the police to the lock hospital. This system might certainly be said to give, as it were, an official sanction to prostitution. It could not, however, be said to encourage or augment the “social evil”; while it undoubtedly had a sanitary effect on the health and efficiency of the soldier. This latter part of the Indian and continental plan could not, perhaps, be carried out in England; but against the establishment of garrison lock hospitals there cannot surely be raised any valid objection.

Bearing on this part of the subject, I might here take occasion to mention a curious regulation adopted by the government authorities at the Portuguese settlement of Goa, on the coast of Malabar. When visiting that interesting and picturesque locality in the year 1827, I found that there existed a native village of prostitutes about two miles from the city. This village was entirely under the control of the government, who derived a special revenue from it, principally, I believe, by the sale of licenses to the women, who, under strict police control, were licensed solely for the European soldiers of the garrison. The village was remarkably clean, the houses comfortable, and all the native girls well dressed. A native doctor was attached to the establishment, who regularly inspected the women, and sent all into hospital who were found diseased. No prostitutes were ever seen in the streets or immediate neighbourhood of the city; and, as far as I could learn, syphilitic complaints were of rare occurrence amongst the soldiers.

I shall now make a few remarks on the periodical health-inspections of our troops. These take place regularly once a week throughout the whole army, under the surgeons and assistant-surgeons of the different regiments, and have always been strictly insisted on (and in general pretty strictly carried out), as a chief means for the detection and prevention of disease. The regulation is, therefore, a very valuable one, and has been in force for a great number of years. As regards its bearing, however, on the detection of venereal disease in its earlier stages, I believe it to fall far short of the desired object. That part of the inspection which requires the special examination of the genitals (performed as it usually is) is disgusting, offensive, demoralising, and degrading, alike to the soldier who submits to it, and the medical officer who performs it. Is it, therefore, to be wondered at that it should be frequently evaded by the soldier, and often loosely and imperfectly performed by the officer? The former finds excuses whenever he can for shirking the inspection altogether; and, if he be affected with a recent chancre or sore of small size, it is not a difficult matter, in the hurry of inspecting perhaps several hundred men, to conceal it even from the most lynx-eyed examiner.

The health-inspection is differently performed in different regiments, according to the custom in the corps, or the views or convenience of the surgeon. In some regiments, the men are marched in a body to the hospital, and passed into or through a room, one by one, for individual examination. This is the surest and least offensive mode of performing it; but it necessarily occupies a great deal of time, is wearisome to all parties, and often inconvenient in keeping the men long from their other duties. The more usual plan is to inspect them in their several barrack-rooms, the men being drawn up in line, and called to “attention” as the medical officer enters the room. In some cases, they stand in their ordinary fatigue dress, each man unbuttoning the front of his trousers, and parading the genitals for the inspecting surgeon; this operation generally giving rise to suppressed manifestations of mirth, shame, or indignation, according to the character and temper of individuals; but at all times, to say the least of it, humiliating and disgusting to the surgeon. Sometimes the soldiers are partially or even entirely undressed, or with the shirt on only, the front tail of which is lifted up as the surgeon passes down the line.

The mention of this mode of performing the health-inspec-

tion recalls to my memory an occurrence of a *shocking* nature, which took place some years ago in North America. The citizens of the southern States of the Union are frequent visitors to Canada in the hot season of the year. They resort, generally, in considerable numbers to the large garrison towns, and take great delight in witnessing the parades and exercises of the British troops, and listening to the military bands. Along the front of the principal barrack at Montreal there ran, at the period to which I allude, a long wooden balcony, at one end of which was the room in which the band of one of the infantry regiments practised at a certain hour every day, and this was, of course, a point of unusual attraction to the American visitors. One day, while the health-inspection was going on, a large party of ladies and gentlemen entered the barrack square, and passed on, unnoticed, towards the music-room, to take up their customary position in front of the open window. It so happened, unfortunately, at the very moment they presented themselves at the window, that the medical officer entered the room by a side door; as he did so, the men (all stripped to their shirts, and drawn up in line to face the window) were called to “attention” by the sergeant-major; up went the shirt tails, by a simultaneous movement, like the curtain of a theatre, and away rushed the ladies and their gentlemen friends from the barrack square, shocked and indignant, as may readily be supposed. I only mention this incident to show what an untoward result, once at least, followed this mode of procedure; and what an offensive, indecent, and humiliating a duty the military medical officer is called on to perform—perform it, indeed, how he may.

In answer to this, it will doubtless be said, “but the duty is an imperative one, and must therefore be performed.” I will, however, describe a plan which I adopted as a regimental surgeon, and which, as far as my individual experience went, was perfectly successful in detecting venereal complaints in their earliest stages, while it got rid of the offensive part of the health-inspection altogether.

When I joined my regiment at Montreal, in the year 18—, I found the regimental hospital literally crowded with syphilitic cases, in the worst stages of primary and secondary progress. On inquiry, I found that, as the practice of the regiment, every soldier, on his discharge from hospital (after admission with a venereal complaint), was compelled to bring up the duty that had passed him during his confinement; and sometimes, if a second or third offence, to undergo a punishment drill in addition. The very natural result of this regulation was, that the soldiers concealed their venereal complaints as long as it was possible for them to do so—some applying for advice, clandestinely, to private practitioners, or even to quacks and unauthorised persons; others treating themselves; while some, more thoughtless perhaps still, allowed the disease to run its course unheeded, until they were detected by the surgeon, or unable any longer to perform their duty. The consequence was, as I stated before, the crowding of the hospital with secondary as well as primary cases of syphilis of the gravest possible character, and causing it to be inferred that the disease in Montreal, at that time, possessed a character of peculiar virulence, which was not the case.

On representing to the commanding officer the injurious tendency of the regulation in question, he said, “Well, but it would neither be just or fair that the married and well-conducted men should be constantly called on to do the duty of these loose fellows, and I think they richly deserve to be punished; but if you can suggest any better plan, I promise you, so far as I am concerned, that it shall be carried into effect.” “My plan,” I replied, “is, that you give stringent orders for every man to report himself at the hospital the moment he perceives that he is affected with a venereal complaint, however apparently trivial. Should I feel satisfied, on examination, that he has had the disease above three days, I will report him to you, on his discharge from hospital, for having concealed his complaint, and you shall punish him, as severely as you think proper, for disobedience of orders.” “But,” said the colonel, “there is already a standing order of the regiment that the men shall report themselves at once for every complaint with which they may become affected.” “I am aware of that,” I replied, “but I wish you to make the order more stringent, and with a special bearing on venereal complaints, and if carried out to the letter, I promise you a result of which you will highly approve.” The order was given. The soldiers were, naturally enough, distrustful and shy of it at first; but soldiers are not slower to see advantage to themselves than their brethren in civil life, and soon they flocked to the hospital so promptly and readily as sometimes

to incur the charge from their comrades of being malingerers for going into hospital with such trifling ailments; but this was a fault on the right side. Simple excoriations were quickly got rid of; and chancres, being in their very first stage, rapidly healed under the local application of caustic and water dressing. The men were discharged to barracks in a few days; they had no extra duty to bring up, if they had not concealed their complaints; and their constitutions were saved from the poisoning of the syphilitic virus, or of mercury given for its cure. After some time, the old cases of secondary syphilis, and sloughing buboes and chancres, were got rid of; and by the end of three months we had scarcely a case of syphilitic disease in the hospital.

The health-inspections took place, as usual, once a week. The men were paraded in their several barrack-rooms, each man, in cold weather, standing on his stockings; legs and feet bare; sleeves and trousers turned up; jacket and shirt-collar thrown open, to expose the throat and chest; hands, face, feet, and legs, washed clean. In passing down the line, it could be seen at a glance if the men had the appearance of health, and were free from ophthalmia, itch, ulcers of the legs, etc.; but no examination was made for venereal disease, because I felt satisfied that such cases would be honestly reported. I therefore left it to the soldier's own honour and sense of duty, as well as self-interest, to come forward themselves; and I must do them the justice to say, I seldom—I believe I may safely add, never—had reason to regret the confidence I placed in them; while I know that they considered the exemption from personal examination in public too great a boon and indulgence to be lightly thrown away.

CASE OF EPILEPSY.

By AUGUSTIN PRICHARD, Esq., Surgeon, Clifton.

THE interesting report of the last illness and *post mortem* examination of the late Professor Alison of Edinburgh, which is published in the *Edinburgh Monthly Journal* for January of this year, reminded me so strongly of a case which was under my care some years ago, that I think it worthy of record.

I obtained the following account of the early life and the medical history of my patient from his cousin, a late practitioner of this city, who had known him well, and from his wife, who survived him; but I had myself known him for some years before his death, and he had been under my medical care.

B. R. died in his seventy-first year, having been insensible from apoplexy for two days before. He had been totally blind from amaurosis, and nearly deaf for fifty-seven years, and had been the subject of epilepsy since his fourteenth year; that is, for about the same time. He had never less than three or four fits daily during this long period, and sometimes he had between twenty and thirty. He made baskets for his livelihood; and, when he felt a fit coming on, he would lay aside his work, and seat himself upon the floor with his back against the wall, and in this sitting posture he would remain until the fit had passed by; and when he recovered himself, he would return to his work. He and his wife were so accustomed to this proceeding, that they thought nothing of it, until two days before his death, when his wife found that he remained insensible, and as it turned out, his epilepsy had changed into a fatal apoplexy.

Taking into calculation the lowest daily number of fits which this poor fellow had, the entire number must have amounted to at least sixty thousand, and probably was very many more; and, notwithstanding this almost incredible series of attacks in his brain, his intellects, such as they were, considering that their development had been checked by the early loss of the two most important senses, sight and hearing, were unimpaired and unaffected, and he lived until he had completed the term usually described as the age of man.

POST MORTEM EXAMINATION. The head only was examined. The dura mater externally was natural, but the arachnoid was very opaque. The ventricles of the brain were filled with fluid and coagula, being the cause of death. In the falx major anteriorly, but not quite touching the crista galli of the ethmoid, was a considerable plate of bone, an inch and a half long, tolerably thick, flat upon one side where it appeared to be rather lying upon or adherent to the fibrous membrane, than in its substance, and upon the other side it was marked by the contiguous convolutions of the brain as distinctly as we see them upon the orbital plate of the frontal bone. At the

upper part of the convexity of the left hemisphere were two round deposits of bone, as large as nuts, under the arachnoid and in the pia mater, pressing down into the substance of the brain, which was much softened around them. There was a single, much larger deposit of the same shape below, and another was attached to the upper surface of the petrous portion of the temporal bone by a pedicle, and occupied a corresponding cavity in the substance of the middle lobe.

Reviews and Notices.

CLINICAL LECTURES ON CERTAIN ACUTE DISEASES. By ROBERT BENTLEY TODD, M.D., F.R.S. Pp. 487. London: John Churchill. 1860.

To no physician of this age is medicine more indebted than to the late Dr. TODD. To him more than to any other is due the credit of having directed the attention of the profession to two cardinal points in therapeutics—the immense value, in certain conditions of the system, of direct and unsparing stimulation; and, secondly, the uselessness of quantitative treatment (depletion) in local inflammations dependent on qualitative blood-derangement. We would not by any means constitute ourselves the indiscriminate advocates of Dr. Todd's practice, nor affirm that in carrying out these dogmata his treatment of disease may not sometimes have been faulty and open to criticism; but we believe his errors, where he erred, to have been errors of detail, not of principle; and the element of truth, involved in the two propositions we have referred to, is so great and of such vast practical import, that by the side of them any error in their application is forgotten. That many diseased conditions which tradition has told us are hyperdynamic are really adynamic; that disease is not merely vital power run riot, but vital power depressed, not merely divergent, but enfeebled physiology; that for a restoration from disease to health we must fall back on the same powers that maintain a state of health; that idiopathic inflammation, if there is such a thing, is extremely rare; that local inflammation is in almost every instance, unless surgical, demonstrably dependent on some special blood-contamination—these were the doctrines Dr. Todd was always enforcing; on which he based his treatment; and on which the volume before us contains his latest convictions.

This volume is the third, and now the last, of a series of Clinical Lectures on various subjects, taken in accordance with the materials for clinical study furnished by the wards of King's College Hospital, and reported successively by Mr. James Salter, Dr. Hyde Salter, Dr. Lionel Beale, and Dr. Conway Evans. The three volumes taken together constitute a valuable mass of practical instruction, and fairly represent the author's clinical teaching for the last twelve years of his life.

The number of specific subjects treated of is small: the lectures are distinctly stated to be "on certain acute diseases"; but the principles laid down in them are of universal application, and, as far as therapeutics go, they may be said to be on acute disease in general. The first three lectures are on Rheumatic Fever; the fourth and fifth on Continued Fever; the sixth on Erysipelas; the seventh on a so-called Erysipelatous Inflammation of the Fauces; four lectures are on Pneumonia; one on Pyæmia; one on the Treatment of Acute Internal Inflammations generally; and the last on the Therapeutical Influence of Alcohol. These last two are perhaps the most interesting of all, involving as they do the direct discussion of those principles on which Dr. Todd based so much of his therapeutics.

In his preface, which is as valuable a part of the work as any, Dr. Todd thus sums up the conclusions which the clinical observations detailed in the lectures tend more or less to establish:—

"1. That the notion so long prevalent in the schools, that