going about, there are often occurrences which are worthy of notice. I shall here subjoin the descriptions of one or two of these attacks.

He was standing on a chair, putting a hat-box on a shelf, when one of the fits came on. His child noticed something queer, and ran for his wife, who found him standing on the chair with pallid face, and the box raised in his hands. He stood in this position for a minute or two, and then, recovering, placed the box on the shelf.

He was working in a shop in Renfield Street, at a time when a son was lying ill of fever. He thinks he imagined his son was dead; but, at any rate, without being the least conscious of what he did, he (according to the account of his shopmates) laid aside his tools, took off and hung up his leather apron, and, after muttering some unintelligible words to the foreman, left the shop. He himself remembers nothing of this; but woke to consciousness to find himself sitting on one of the benches in George Square. On comparing the hours, it seems that this was about ten minutes after he left the shop, and in the interval he walked through the busy streets from Renfield Street to George Square.

On another occasion, while he was sitting on a trunk, his wife noticed by the pallor of his face that he was having a fit. *After the paleness had gone*, he cried out: "There it is; take it, lift it", pointing to the floor. He at the same time made efforts to raise the lid of the trunk on which he was sitting. All this time he was quite unconscious, and has no idea of what he saw or supposed he saw.

Several times, he has walked considerable distances while perfectly unconscious, and has once or twice dropped his staff while in this state. Quite recently, he was outside the hospital on leave, and met a friend in Partick. One of the attacks came on, and the next thing he remembers is standing in a public-house and pointing to the bottles on the shelf. His friend, seeing him ill, had asked him to go to the public-house, and he had walked there, a distance of over a hundred yards, apparently without difficulty, but absolutely unconscious.

In the relation of this case, one is struck at once with the peculiar nature of the so-called aura or warning. In speaking of the former case, I regarded the feeling of numbness in the thumb and fingers as the first evidence of action in the nervous centres. This feeling, which I suppose would be called an aura, I regarded as, in fact, the beginning of the attack, and as affording evidence to us of the seat of origin of the process. And the aura in the present case I would regard as of similar import. The peculiar thought which the patient describes as preceding every attack indicates that the action always begins in the same part of the nervous centres. He says there is nothing specially terrible or unpleasant about the thought, nor is it a particularly agreeable one; but he has always found it there, and has always found it the same. The fact that a phenomenon of this kind is the initial one in the present case I regard as of considerable importance in relation to certain other peculiar features in the case. The centre primarily involved must be a very high one; it is one intimately related to mental or intellectual processes. This I regard as of consequence in view of an explanation, originated by Hughlings Jackson, of such phenomena as we find here. In an article in the *West Riding Asylum Reports* for 1875, there is a paper by that author, to which I would refer for a more detailed exposition of the theory. Suffice it to say that, in those cases in which patients are found to perform actions during a fit which have all the appearance of voluntary acts, these actions are really automatic. The nervous system is apparently built up in successive stages. The lowest centres, such as those in the cord, are simple; but, as we ascend, we come to more and more complex centres till we reach the highest, which are presumably most intimately related to the mind and will. The lower centres are, to a certain extent, independent, but also under the command or control of the higher. We may perform such actions as walking without any appreciable exercise of volition, or we may do them with the most direct volition. In the former case, the centres concerned in walking are acting, in a measure, automatically; in the latter, they are dominated by the higher centres. And now, if a high centre be put out of action, the lower may act automatically. If, as the result of an epileptic attack, a high centre be temporarily paralysed, then the lower centres may go on acting out of the control of the will. We know that epilepsy does produce a temporary exhaustion or paralysis of the centres which have discharged, and, if these be high centres, and if, along with them, low centres be not affected, then, after the discharge of these higher centres, there may be an unconscious and automatic action of the lower ones. And we may apply this to our case. The fact that the fit always begins with some indescribable thought indicates that a high centre is affected; and the fact that there are never serious convulsions shows that the fits are not in the habit of going deep, at least to motor centres. But, as a result of the fit, we have these peculiar automatic actions which I have so often referred to.

I would here advert to one other point involved in this view of Hugh-

lings Jackson. He insists that these actions occur after the discharge; are not actually the fit, although often described as if they replaced it. The case before us adds confirmation to this view. It is noted that paleness always accompanies the attack, and, in describing one of these peculiar occurrences, he distinctly states that, according to the evidence of his wife, it was after the paleness had gone that he pointed to the floor and cried out, "There it is; take it, lift it", and so on.

The particular kind of automatic action seems to be determined by accident. Hitherto he has never done anything peculiar when the fits occurred while he was in bed. He just lay still. But, if he were walking, he continued walking. In the last occurrence reported, the action seemed to be determined by the invitation of his friend to adjourn to a public-house. In this respect, the phenomena of the fit itself contrast with those following it, and I believe this to be a general rule. The attack comes on in an invariably constant form; but these automatic actions depend on the particular centre which happens to be most active at the time.

But this and similar cases have also some importance in a medico-legal point of view. Suppose that this man, instead of being a gentle and peaceable citizen, had been a rather ferocious man, with frequently thoughts of ill in his head; or suppose even that, at the particular time of the onset of one of these fits, his thoughts had been running on evil things. In either case, the subsequent automatic action would probably be determined by the ideas present, and, instead of an innocent and perhaps absurd performance, we might have a gross and palpable outrage. In such a case, I think there are few lawyers who would believe that the act was otherwise than criminal, especially if the previous conduct of the accused lent any weight to this view.

NOTES OF A VISIT TO THE MILITARY HOSPITALS OF THE CONTINENT.

By ALBERT A. GORE, M.D., Surgeon-Major, Dublin.

ON entering Austria, the traveller gets into an altogether different military atmosphere from that of Germany. The more practical dress of the German soldier gives place to uniforms more diversified in colour, and to an army less homogeneous in its rank and file. The men are of lighter build and rather taller than those composing the German infantry. The white uniforms, with turn-down grey or green collars, the light-blue trousers, and cow-skin knapsacks, have a pretty effect. Both men and officers wear a small stock, with a white rim, which shows above the collar. The men of the Hungarian regiments wear tight-fitting pantaloons and laced boots. Blue and brown loose-fitting patent jackets are also worn. The knapsack appears smaller than the one carried by the Prussians; but the folded greatcoat is more round the body, as in Germany, and the chako replaces the helmet. The general effect of the different uniforms in large masses is striking. The Hungarian soldiers are small, active fellows, with dark beards. The "campaign dress", or every-day uniform, of the Austrian medical officer is a pretty one, and very similar to that worn by officers of infantry: a small chako, with a gold beading round the bottom and a gold-lace device in front; a short light-blue patent jacket, with breast and side pockets, gilt buttons, a black velvet patch on the collar, on which was embroidered the badges of rank in gold—one, two, or three stars, according as the officer is an under-surgeon, over-surgeon, or battalion-surgeon. These stars are replaced by two pieces of gold-lace, indicating the rank of brigade-surgeon or surgeon-major. The collar of the Generalarzt is of gold-lace, with a broad Austrian knot of the same material on the cuffs. Gold-lace round belt, cavalry-pattern sword, and dark-coloured trousers, with a red or gold stripe, are worn by all officers. The hospital orderlies, or men of the Garnitals corps, wear dark-green patent jackets, with a patch of magenta on the collar. There are twelve companies of ambulance and hospital service; 1,180 on a peace footing, 3,876 on a war strength, and a "sanitary department", 1,291 in peace, 6,200 in war. The standing army numbers 278,470, capable of being raised to 831,709. The different ranks of medical officers are: Unterarzt, Oberarzt, Regimentsarzt, Brigadearzt. Each regiment of the line is composed of three field-battalions, two reserve, and one dépôt-battalion. When a soldier falls sick, the procedure is very similar to that in use in Prussia. An under-surgeon resides in barracks or the immediate neighbourhood.

Previously to the termination of the Franco-Italian war in 1854, and as late as the military events in Bohemia in 1866, the punishment in the Austrian army had been most severe, applications of the cane being not uncommon for very slight offences. Since then, a milder code has sprung up, with the happy effect of creating a far better feeling between officers and men. Arrest in barracks, or, in graver cases, the use of

irons or definite periods upon bread and water, work upon the fortifications, or confinement within the walls of a fortress, have replaced the regulations of former times.

The Austrian soldier rises with the lark, and goes to his drill in the early morning between five and six o'clock, and sometimes has a long way to get to his drill-ground. He returns between ten and eleven to his dinner, after which he has no regular meal. He is allowed a little over two pounds of bread a day and twenty kreutzers, out of which last sum he has to provide his dinner. He is paid a florin (100 kreutzers) every five days; but this sum is retained by the pay-sergeant, who deducts the price of the dinner-meals; these cost something less than the 100 kreutzers, so that the soldier has about twenty kreutzers to spend every fifth day on beer, if not in debt for blacking or some small thing of the kind. A private of the company acts in turn as cook, and accompanies the sergeant to market daily in order to bring home meat, vegetables, potatoes, for soups, etc. The friends of the soldiers often send them small sums of money, which the richer shares with the poorer comrade who may have nothing but his pay. Men who re-engage after their eight years' service are entitled to a medal.

Some of the barracks in Vienna are very fine ones. In one of the largest, which held three regiments, the cavalry-stables occupy the lower storey, above which are the rooms for the troopers, and over these those of the infantry. Early in September, forty thousand men were encamped not far from the capital, near Gunterdorf, ten to eleven miles distant. From there the sick requiring hospital treatment were sent daily to Vienna, and transferred from the station in old-pattern ambulances or omnibuses drawn by two horses.

The military hospital—"Garnisons-Spital"—is situated not far from the great civil hospital in the Alsenstrasse, founded in 1873, and containing two thousand five hundred beds in one hundred and eighty-four rooms, with fifty physicians and four hundred nurses. The "Garnisons-Spital" is very large, and arranged in two quadrangles. In the centre of one is a garden for the men; in the centre of the other, one for the officers. It contains eight hundred beds, and, on September 5th, seven hundred sick, one hundred and sixty of which number were cases of venereal. The hospital receives the sick from the garrison of Vienna, numbering some six thousand, and from the camp near Gaumendorf. They arrive at 9.30 A.M., bringing with them their regimental clothing and equipment, which are received into store. The ward-windows open upon the circumference of the quadrangle; the doors, upon the windows, which run along the hollow of the blocks. In each of these last are a ground, first, and second floor. On the ground-floor are the offices for the administration; wards for infectious diseases; prisoners'; the guard-room; cook-house; pharmacy; apparatus for supplying hot water; and the baths, which are capable of bathing one hundred patients in a day. There are forty-five beds for officers, twenty-five of which were occupied on September 5th. Each officer's ward contains from one to five beds; it is very neatly furnished, the beds with blue and white counterpanes. The floors are stained oak-colour and polished. At the foot of each bed is an ornamental screen. There are also some easy-chairs, and to each patient is appropriated a wardrobe. Ten servants or orderlies were allocated to sick officers. On every landing are the closets and an urinal arranged in a circle; and the hospital orderlies sleep in barrack-rooms, which appeared very neat and in excellent order.

Each division or corridor of the hospital was in charge of a surgeon-major or division-surgeon, a regimental surgeon ranking as captain, an upper and an under surgeon, and some one year's volunteers, and a proportion of students, some two hundred of whom were undergoing instruction in the Military Medical School. In these corridors were the consulting rooms of the division medical officers. The medical chief of the hospital—a surgeon-major—had entire control over the establishment, with the exception of administering punishment to offenders against discipline, who were handed over to the military authorities. The regular staff consists of a medical chief, five surgeons-major, two brigade-surgeons, four regimental surgeons, five under-surgeons, three volunteers, and some student-assistants. The two latter classes of officials perform the greater part of the clinical work in the wards. The officers of administration wear grey uniforms with silver lace.

Five hundred, seven hundred, and eight hundred cubic *mètres* of air-space are allowed to individual patients. The beds are of wood, massive, and oak-coloured. The contrast of colour with the lime-washed walls is pleasing to the eye. The wards are lighted with paraffin-lamps, and warmed by heated air. The number of beds varies from two, five, fifteen, to thirty. Two junior medical officers and the chaplain reside in the hospital. The under-surgeon on duty wears his uniform with a sword, and does not leave the precincts of the hospital. The quarters of the resident surgeons are very nicely

furnished. On entering from the corridor, a small closet is met with, in which is the bed of the officer's servant, a private of the Sanitary Corps. Immediately beyond is a large sitting-room, communicating with a bed-chamber.

The divisions are external or surgical, internal or medical; venereal, and similar divisions for diseases of the throat, eye, and nerves. There are also separate wards for insane patients and prisoners. In the hospital are also the lecture-rooms, pathological museum, and mortuary of the medical school, and a store-room in which are a supply of coffins, in shape not unlike a sarcophagus, richly gilt for officers—a plain white cross marks the soldier's. From sixty to eighty deaths occur in each year. In the pathological museum are some very large skeletons. One, of a soldier who died during the revolution of 1848, is nearly eight feet in height from the floor.

In order to ventilate the wards, the cold air is made to enter from the outside through a large opening in the base of the wall; this is protected by a grating. From here it is conducted by means of a shaft to the ward, previous to entering which it is warmed in passing through an air-chamber in a large stove, and then enters the ward through louvered openings. There are two openings, one near the floor, the other at the ceiling. In summer, the former opening is closed, and the cold air descends from the latter as from the Sherringham valves in our hospitals. The foul or heated air makes its exit through openings near to the ceiling above, or between the windows on the opposite or outside walls. The absence of an unpleasant odour on entering a ward affords a good test of this system of ventilation. Along the centre of the larger wards is a long table, and, at the bed-heads, a small oak-painted cupboard with a small drawer. The pharmacy is a very large one, and in charge of three chemists and their assistant. A large shed in the hospital yard affords protection to recent ambulances.

There are only two kinds of sick diet in use—"full portion" and "half portion", with the addition of extras when required. Vermicelli enters largely into the preparation of the soup, which is prepared in a large copper boiler. A number of cases of pulmonary consumption appeared to be under treatment. This consisted chiefly of the administration of tonics, quinine, acids, and wine, but not of cod-liver oil; a medicine the advantages of which did not seem to be fully appreciated.

No females are allowed in the streets without a male companion after 10 P.M. The better class of *femme de publique* are allowed to choose their own physicians, whose certificate of health has to be produced to the police authorities weekly. He has certain hours for seeing them, and receives a fee of two or three florins for each examination, and is responsible for the correctness of his view. One of the effects of this curfew law is that, after 10 P.M., the streets are nearly deserted by females, who resort to the *cafés* of the hotels until conveyed home in hackney *voitures*.

There is one sight in this most charming of capitals which no soldier should fail to see; the Town Arsenal, containing a very fine collection of armour and weapons of different ages, including in the collection the skull of Mustapha Pasha, who threatened Vienna in the sixteenth century. After his repulse, he retired to Belgrade, when he received from the Sultan a silk rope, with which he was immediately strangled. The skull, a very small one, the rope, and his shirt, are preserved in a glass case. They were removed from his tomb at Belgrade when taken afterwards by the Austrians. The shirt, now dark with age, is covered over with Arabic characters, and is woven in one piece. The custodian of the museum says that the ponderous armour of the knights of old only weighs sixty pounds; not a great weight for heavy armed cavalry. It is difficult to conceive how they could have fought in so cumbrous a defence.

CASE OF INTUSSUSCEPTION OF BOWEL: SPHACELATION: RECOVERY.

By E. A. FOX, L.R.C.P.ED.,

Physician to the Warrington Dispensary and Infirmary.

B. B., AGED 4½, was a boy of delicate constitution, subject to bilious attacks and paroxysms of violent temper, and of rather costive habit.

July 12th, 1876. He was perfectly well and running about. He had his bowels naturally moved during the day. On the 13th, he complained of pain in his bowels, and was vomiting everything he took. His mother gave him an enema, which produced a natural alvine evacuation. On the 14th, his mother, finding that there was no improvement, and the pain and vomiting continuing, sent for me.

I found him lying in bed, with marks of bilious vomiting on his night-dress; his tongue coated, skin cool, pulse natural. He com-