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South-Western Railway Company's carriage works; the exterior is of a light-coloured polished wood, and is ornamented at the centres with the naval crown over the St. John Ambulance badge. Altogether this "medical (and surgical) comfort" reflects great credit on the naval medical administration, the designer, and the builder. The illustration (Fig. 1) shows the interior arrangements of this ambulance railway carriage.

The Royal Naval Cot.—Here the superior advantages of this long-established cot may be described; it consists of a flat wood frame of some 7 ft. in length and $2\frac{1}{2}$ ft. in width; the frame is secured in canvas, which forms the bottom, sides, and ends; the latter, above the cot proper, are brought up to an apex, with suitable arrangements for slinging it to hooks on board ship, or to a ridge pole for hoisting it in or out of a ship; by the firm wooden frame it can be hand carried; the patient, if necessary, can be laced into it by the canvas sides; it would apparently be impossible to improve on it for the transport of helpless patients, and we have known of it being extremely valuable, if not indispensable, in removing a critical case from her bed at her residence to a mail steamer at a foreign port, the naval seamen and midshipmen in charge proving themselves perfect bearers in that case.

THE ROYAL NAVAL AMBULANCE STEAM LAUNCH.

Cotemporary with the provision of a royal naval ambulance railway carriage, the naval authorities have established at Portsmouth two ambulance steam launches for the transfer of naval sick cot cases, and the more able-bodied from ships and transports at Spithead, as well as from the harbour ships at Portsmouth to Haslar Hospital, situated near a creek leading out of Portsmouth Harbour, and where a pontoon landing place is provided, with a covered way leading to the railway or tram carriage, fitted to transport these cots and more able-bodied sick to that hospital, distant about a-quarter of a mile from this landing.

This ambulance twin-screw steam launch was designed under the late naval medical administration, the arrangements were arrived at by the medical authorities at Haslar, and the constructor's department, Portsmouth Dockyard, who have achieved a long-desired reform in this matter.

Previously each ship sent its sick, including cot cases, to hospital in their own steam launches or larger boats, with no special provision for the purpose; this entailed a large expenditure of labour, and but little comfort to the sick. Now by the provision of two of these ambulance twin-screw steam launches the sick can be collected from all ships, at suitable hours and time of tide, and conveyed in comfort to Haslar. These ambulance launches work on alternate days, and thus secure a continuous system of efficiency.

The arrangement on board the ambulance steam launches will be readily seen from the sketches given (Figs. 2 and 3). They are 72 feet in length, and have 15 feet beam amidship, with a draught of about 3 feet. Owing to a comparatively flat bottom they roll somewhat in a seaway, or in the wash of steamers in the harbour; their length entails great care in piloting them up Haslar Creek, which might be advantageously dredged to render the hospital more accessible by the launches at all states of the tide.

In the fore part of the launch, on battened shelving, is accommodation for 12 naval cots in two tiers; the after cot spaces can be screened off if necessary from the foremost ones; the shelves are provided with steadying brass "lugs," but the spring frame-rests for the cots are not provided as in the railway ambulance carriage; these would be a desirable fitting.

The cot compartment is reached by a broad staircase with hooded covering; lockers are placed on the sides of the boat at the foot of the staircase and outside the sliding double doors enclosing the cot space. Aft this cot compartment is the engine room and the twin screw propellers, and in the stern sheets space is found for seats for the more able-bodied patients and the patients' effects, bags, chests, etc. The cot compartment has two raised skylights overhead, fore and aft of it, for ventilation, with candle lamps on the sides for artificial light when requisite.

Eighty thousand dollars have recently been given for the purpose of building a new laboratory of physiology and anatomy in Cornell University.

THE WAR IN SOUTH AFRICA.

AT BLOEMFONTEIN.

By Sir WILLIAM THOMSON,

Surgeon-in-Chief, Irish Hospital, Field Force, South Africa.

THE MOVE OF THE IRISH HOSPITAL TO BLOEMFONTEIN.

THE troops which entered this town after the series of victories by Lord Roberts were half starved and the horses were mere shadows. Before anything could be done in further operations it was necessary to get up food and general supplies, and what it meant to feed 50,000 men along a single line of rail 750 miles from the base may easily be imagined. At last orders came for our section, under Dr. Stoker, to return to De Aar, and that the portion with myself should march to Norval's Pont, and having joined there proceed by road to Bloemfontein. The tents and some of our baggage were conveyed by train, and this party and myself reached Bloemfontein on the morning of April 11th. The rest of the corps, with the exception of two orderlies with a waggon still detained in the Prieska district, arrived on April 21st after a trying march.

Colonel Stevenson, the P.M.O., assigned us a very pleasant camping ground on the slope of the principal hill which overlooks the town, and in a short time we were able to take in patients. A large number of these were suffering from enteric fever, and some were wounded. These unfortunate fellows had been lying on the ground in field hospitals, and had had long distances to travel. Two of them were insensible when they arrived, and, in spite of all the care we could give, never rallied. For others the evil day was only postponed, and in the first week we lost eight men. Later on other consignments arrived. Some of the wounded had been two days in bullock waggons, with but little to eat, yet bearing their distresses with characteristic bravery.

On the afternoon of May 2nd a convoy of wounded arrived in bullock waggons, after a march of forty-eight hours, in charge of Dr. Engelbach, civil surgeon. They were men of the 12th Lancers and other cavalry regiments who had been surprised while watering horses after a day's engagement. While they were clumped together in the water some guns, including a Vickers-Maxim, were turned on by the Boers with serious results. One man, a sergeant of the 12th Lancers, was struck on the right side of the head by a pom-pom shell. It carried away a large portion of the parietal bone, and brain substance was freely oozing out. He was quite insensible; the wonder was that he lived so long. An exploration with the finger discovered a cavity about the size of an egg, and lying near the petrous portion of the temporal a large fragment of bone. He lived until next day. It was then found that the vault was extensively fractured, and that it was only held in position by the scalp.

WOUNDS OF THE KNEE.

A fine young fellow of the same regiment was struck in the very centre of the popliteal space by a fragment of shell. Dr. Engelbach said the hæmorrhage was so severe that he thought the artery had been ruptured. He had securely bandaged the part and controlled the vessel with a tourniquet. On exposing the parts I found an extensive penetrating wound occupying the popliteal space, and a large fragment of shell embedded in the soft parts anteriorly. The finger passed easily in from behind, and I then found fracture of the head of the tibia, the inner condyle broken off obliquely into the shaft, and general disorganisation. I accordingly amputated the limb. One of the large venæ comites was open for about an inch. The artery had escaped, but was thrombosed.

I have had two cases of gunshot wound of the knee-joint—one by a Mauser bullet, one by a Martini-Henry. In the first the bullet entered below the base of the inner condyle and passed outwards and upwards. There was much effusion, attended by starting pains. A radiograph by Dr. Friel showed that a large oval fragment about 3 inches long had been raised off the lower end of the shaft. There was a little fever, but the wounds healed without suppuration, and the patient has been sent to the Cape. In the second case the bullet was removed on the field by cutting down at the inner margin of the patella and a little below. The Martini-Henry bullet has

no nickel covering and is composed of lead, and in this case its extremity had spread and the cup-shaped expansion was filled with bone. Here there is some fever, but in spite of the severe wound I hope the case will do well.

WONDERFUL ESCAPES.

There are other cases of bullet wound of the limbs and thorax which are proceeding satisfactorily. Of the curiosities which one meets here I may mention two. Just a week ago a man of the 10th Hussars was shot through the nose. The bullet entered the left ala just above the margin, passed through the septum, and out through the right ala. No dressing was required after the fourth day, and the wounds are represented by two small upright lines.

A sergeant of the 12th Lancers was badly contused over the inner condyle of the left humerus. A pom-pom shell entered his haversack behind, traversed his notebooks and letters, and escaped in front. He had some extravasation of blood about the elbow and tingling along the ulnar nerve, but he was otherwise unharmed. Another man was knocked off his horse by a glancing blow of a "pom-pom" on the right side just above the zygomatic arch. Beyond an abrasion and much headache he is very well.

THE HOSPITALS IN BLOEMFONTEIN.

The stress and consequent exhaustion of the weeks of marching and fighting which culminated in the occupation of Bloemfontein have told their tale. To-day there are between 3,000 and 4,000 sick in this town, and of these 1,200 are enteric cases. This gives an idea of the amount of work to be done. The military general hospitals 8, 9, and 10 are crowded. No. 9 has already 1,500 patients. Several of the public buildings—the Raandzaal, Grey College, and others—are utilised for the accommodation of the sick, and in addition there are the Irish Hospital, the Portland, and the Langman. They are by no means too numerous; indeed, they are not by any means sufficient to relieve the strain, and one only hopes that the cooler weather and the rest which the troops have had may help to lessen the streams of sick which flow daily into the town.

THE AMBULANCES OF THE IRISH HOSPITAL.

The waggon equipment of the Irish Hospital (fifteen ambulances) has been found of inestimable advantage to the local medical authorities. No other hospital here, except the Australian, is supplied with such means of transport. We have carried hundreds of sick and wounded for the various hospitals which have no efficient means of conveyance.

THE SPECIAL HOSPITALS.

IMPERIAL YEOMANRY HOSPITAL.

We learn from Mr. Alfred Frupp that the site at Deelfontein proves on further acquaintance to be very well adapted for the purposes of the hospital. In the middle of April it contained 550 beds, and it was the intention shortly to raise it to 750; this would be rendered possible owing to Surgeon-General Wilson having sent fifteen extra tents. In consequence of the great number of cases of enteric fever at Bloemfontein, numbering close upon 2,000, all surgical cases were then being sent, as soon as possible, to the various hospitals south of the Orange River; some went to the Scottish Hospital at Norval's Pont, others to the General Hospital at Naauwpoort, others to the Stationary Hospital at De Aar, which had 300 beds, and a considerable portion went to Deelfontein. The air of the place was beneficial to the wounded, who, as a rule, soon learnt to do justice to the products of the French cook, who produced admirable dishes from unpromising material. The hospital also contained many cases of enteric fever but the proportion was tending to diminish. The detachments from the St. John Ambulance and the London Fire Brigade had worked well, both in establishing the hospital and in tending the sick.

The Imperial Yeomanry Field Hospital under Major Stonham, spent some hours at Deelfontein before resuming the journey northward, and the staff were in hopes that it would be in time to be included in Lord Roberts's advance.

THE LANGMAN HOSPITAL.

By the request of the Principal Medical Officer at Bloemfontein, the Langman Hospital of 100 beds has been con-

verted into one of 150, the necessary equipment for which has been provided by Mr. Langman, and despatched to South Africa. The medical staff has been increased by the appointment of Mr. W. W. Woolliscroft, M.R.C.S., late House-Surgeon to Charing Cross Hospital.

WITH THE NATAL FIELD FORCE.

[FROM AN OCCASIONAL CORRESPONDENT.]

SINCE the relief of Ladysmith the troops have been encamped at strategical points along the Natal Government Railway, including Colenso, Ladysmith, Modder Spruit, and Elands-laagte. Most of the troops which formed the Ladysmith garrison are at present at Modder Spruit, and the men are rapidly regaining health and strength. The rainy season in Natal is now over, and the weather and climate are all that could be desired. The days are bright and pleasantly warm, the nights cool and refreshing. Dysentery is still very prevalent amongst the troops, but simple-continued and enteric fevers are rapidly diminishing.

RATIONS.

A greater variety in rations is now possible. For the time being tinned provisions are no longer in use. Fresh beef or mutton is issued daily, and vegetables are obtainable in fair quantities. Fruit, consisting of delicious oranges and pine apples, can be purchased in practically unlimited quantities. The only alcoholic drink obtainable by the men at present is beer, manufactured by the Natal Brewery Company. Most of the units in Natal have arranged for a supply of this, but the daily issue is wisely limited to 2 pints a man.

BRITISH RED CROSS SOCIETY.

This Society has now started a branch in Ladysmith, and is doing excellent work. The officials there, as elsewhere, are eminently obliging, and are always glad to see officers of any branch of the service at their office. They have large supplies of warm underclothing and medical comforts on which officers in command of units are allowed to draw to an almost unlimited extent.

FIELD HOSPITALS.

In one of his interesting letters from Chieveley, published in the BRITISH MEDICAL JOURNAL for March 24th, 1900. Mr. Frederick Treves, F.R.C.S., describes a visit to one of the field hospitals—hospitals whose officers have, as Mr. Treves justly observes, "the heaviest duties, the greatest share of hardships, and I am afraid the least credit for their splendid work." A brief description of the *personnel* and work of a field hospital will no doubt interest your readers. The *personnel* consists of 4 medical officers, a quartermaster, and 35 non-commissioned officers and men. Each hospital left England with this establishment complete. Since taking the field, however, numerous casualties have occurred amongst both officers and men until at the present moment many of the field hospitals are working with little more than half their original establishments.

Each hospital is equipped with its own transport, medical and surgical panniers and tents, calculated for 100 patients. In sudden emergencies, however, some at least of the field hospitals have treated as many as 300 sick and wounded at a time during the present campaign, obtaining additional tents from the regiments of the brigade to accommodate them. Under ordinary circumstances a field hospital has 40 tents, one square operating and 39 circular tents; 25 of these are for the accommodation of sick, the remainder are occupied by the *personnel*, surgery, office, packstore, etc. The hospital is pitched on a regulation plan with mathematical accuracy, the space occupied being 70 yards by 160 yards.

A field hospital is essentially a mobile unit, as it must accompany its brigade wherever and whenever it moves. When a march is ordered the hospital tents must be struck, and they and the equipment packed on the waggons by the hour appointed. The *personnel* and waggons then move off immediately in rear of the troops and in front of the brigade baggage waggons. On completing the march of, say, ten to fifteen miles or sometimes more, the men have to mark out a new camp on carefully-selected ground, to unpack the equipment, to pitch the tents, and to dig kitchens, ashpits, and latrines. The officers and men have then to commence

their duties of attending to the sick and wounded. Leisure is an unknown luxury to them, and the weekly or bi-weekly holiday enjoyed by other branches of the service is only known to them by name. If an action is in progress there may be a sudden and large influx of wounded. As each wounded man reaches the hospital he is examined; his name, with full particulars, is entered in the Admission and Discharge Book, and in addition on the "Return of Wounded;" and on the latter his wound is classified according to its degree of severity, its locality, and the projectile which caused it. Operations of emergency, such as removal of bullets, ligature of bleeding vessels, or amputation of badly-shattered limbs are performed. The wound is then dressed antiseptically, and the patient is ordered whatever nourishment and extras are considered suitable to his case.

The officers or the field hospitals are also responsible for the selection of cases for transfer to the base, and have to be careful to exclude all cases which are unfit to travel. When a large number are pouring into the hospitals this is no light duty. They also have to prepare the hundred and one returns which are required in the field, and must be ready at all times to answer queries about the wounded. If the action is severe or prolonged, they have to snatch food and sleep as best they can, the latter probably lying on the ground in clothes and boots, which may not have been changed for days.

From this it will be seen that Mr. Treves's reference to "the heaviest duties, the greatest share of hardships," is fully justified. Let us hope, however, that the latter part of his sentence about the "least credit" will not be justified in the present instance. The officers of the field hospitals have worked with the utmost courage, skill, and devotion, and they certainly merit a due share of any rewards which may be distributed. Their work is apt to be overlooked, as it is not done in the public view. It is, however, of the first importance, and the splendid results obtained in the stationary and general hospitals during the present campaign would have been impossible were it not for the care with which the field hospitals have carried out their important duties.

The work of a medical officer on field service is no doubt arduous, and the life is not devoid of hardships. Taking the rough with the smooth, however, campaigning in South Africa is full of variety, interest, and excitement, which cannot be equalled under any other conditions, whilst the experience gained is quite unique.

The Fifth and Sixth Brigade Field Hospitals, which were unavoidably left in Natal when their brigades proceeded to join Lord Roberts's forces in the Orange Free State, have now been ordered to rejoin their original brigades, much to the delight of all concerned.

THE VICTORIA CROSS.

The announcement that the Victoria Cross had been conferred on Major W. Babbie, O.M.G., for his heroism at the battle of Colenso, which reached Ladysmith on April 22nd, was received with universal satisfaction. In his capacity of Secretary to the P.M.O., Major Babbie has endeared himself to every officer of the corps in Natal. It is rumoured that at least two other medical officers with the Natal Field Force have been recommended for this coveted distinction for conspicuous bravery during the attack on Pieter's Hill, namely, Captain J. H. Campbell and Lieutenant E. T. Inkson. The case of Captain Campbell has already been referred to. Lieutenant Inkson has in reality earned the Cross on at least three different occasions. At the battle of Colenso he was in medical charge of the Royal Artillery, and was conspicuous for his disregard of danger, and for the coolness and constancy with which he exposed himself to the hottest fire whilst collecting and dressing the wounded. He was then transferred to the Royal Inniskilling Fusiliers, and with them was present at each of the subsequent battles. At the battle of Spion Kop he dressed the wounded for five consecutive days under the hottest fire from the Boer trenches. At the attack on Pieter's Hill he was in charge of the Inniskilling Fusiliers, and dressed the wounded wherever they fell. Finally, he was left alone in an advanced position with a wounded field officer. He brought the officer back unaided under a murderous fire from the Boer trenches.

THE ACTION AT TALANA HILL, DUNDEE.

WE are indebted to Major J. F. Donegan, R.A.M.C., Officer Commanding No. 18 British Field Hospital, for some notes on the wounds and injuries treated in that hospital after the action on October 20th, 1899. The total number of wounded was 105; of these 6 were dangerous (including 1 officer), 79 severe (including 13 officers and 3 hospital bearers), and 20 were slight. Of the slight wounds all had completely healed by October 23rd. By October 30th 30 of 79 seriously wounded men were available for duty, their wounds being either healed or in the stage of granulation. Up to the date of leaving Dundee (November 3rd) 5 patients had died, and 1 case likely to die (a wound of spine) was left behind, unfit to travel. The fatal cases were wounds of stomach and intestines, vault of skull and brain, and a severe wound of lung. They unfortunately included Major-General Sir William Penn Symonds, K.C.B., who died on October 23rd, while the hospital was in the hands of the Boers. Throughout there was only one case where pus formed in the locality of wounds: a severe wound of the leg, with splintering of bone. When the hospital moved only four cases were left behind as unfit to travel, one officer wounded in three places, the case of spine and leg wound referred to, and also a wound through the hip-joint. They were progressing most favourably, with the exception of the spine case, which was considered mortal from the first.

One officer was wounded by three distinct bullets, 1 officer and 18 men were wounded twice with different bullets, there being an interval of time between the injuries in some cases, or when the first wound was not, in his own estimation, sufficiently severe to prevent the man doing his duty. This is an instance of the bravery and determination of the British officer and soldier in the attack on Talana Hill.

One man wounded through the lung and liver with unmistakable symptoms was able to sit up in bed ten days after injury, and on arrival at Ladysmith on November 4th, 1899, he had almost recovered.

Two men were shot through the neck, the bullet entering the mouth and injuring the soft palate and tongue. They suffered exceedingly for some days, but eventually recovered.

Three cases of penetration of the knee-joint did excellently, recovering without a rise of temperature. In two of these three stiff joints will undoubtedly result, but even this is satisfactory when compared with wounds of this locality in the North-West Frontier campaign, where there was hardly a recovery on record, the injury requiring amputation in almost all cases.

In 16 cases the bullets were lodged in the tissues; 14 of these were removed; 2 were left *in situ*, one in the lung appeared to do no harm, and the other, situated deep in the muscles of the buttock, could not be located without x-ray examination; only one amputation was performed—removal of fingers. Major Donegan attributes the favourable results to the following causes:

1. To the Mauser bullet itself, which is a merciful projectile at long ranges, only followed by fatal results in the case of injury to large arteries, vital organs, and intestines.
2. To the bullet being nickel-coated and therefore aseptic.
3. To its tendency being more to penetrate than to smash and destroy tissues at long ranges.
4. To the manner in which the wounded were dressed and attended to in the field, and also to their rapid removal to shelter. This necessitated the Indian bearers working under tolerably heavy fire, but, under the supervision of officers, warrant officers, British non-commissioned officers, and men attached to hospital, they carried out their duties in the most satisfactory manner, and, by availing themselves of all cover, escaped with only 3 casualties. At this date no wheeled transport had been supplied; on this account the removal of the wounded from the field had to be commenced the minute the infantry advanced, otherwise they would have been left out all night. In all about 241 wounded were removed by the dhoolie bearers from the field of action to the field and temporary hospitals. The battle lasted from 5 A.M. to about 2.30 in the afternoon of October 20th, 1899.
5. To the excellent and careful manner in which all cases

were attended to at the dressing station by Major Kerin, R.A.M.C. In many cases dressings applied there were not removed till the patient was completely recovered.

6. To the subsequent treatment of the wounded in hospital by the officers and assistant surgeons of No. 13 B. F. Hospital. This included the removal of bullets, rearrangement of dressings under the most trying circumstances, when the hospital was exposed to heavy fire on October 21st and 22nd, 1899, when shells frequently burst between tents where the staff were working.

With the exception of Major-General Sir William Penn Symonds, K.C.B., and some men dressed in the field, the cases mentioned were under the professional care of Captain McDermott, Captain Erskine, and Captain Milner, R.A.M.C.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Continued from p. 1300.)

THE ETIOLOGY OF MALARIA.

DR. W. S. THAYER, of Johns Hopkins University, read a paper on Recent Advances in Knowledge concerning the Etiology of Malarial Fever. After reviewing the recent work of Manson, Ross, Grassi, Bastianelli, Bignami, and Celli, he said the conditions in Baltimore appeared to be essentially the same as those in Northern Italy. In that city they observed the main variety of mosquito, the *Culex pungens*, while in the suburbs they had found numerous examples of other *Culices* (especially the *C. taeniorhynchus* and the *C. triseriata*). Repeated feeding experiments with different *Culices* upon human beings and upon birds infected with *Laverania Danilevskyi* were without result. At Sparrows' Point, a most malarious district in the suburbs, and in a number of houses in the neighbourhood; beside the ordinary *Culices* there were found to be great numbers of the *Anopheles quadrimaculatus* (Say). This *Anopheles*, both in the markings upon its wings and in its gross appearance, was very similar to the *Anopheles claviger*. In several examples of this mosquito obtained from the room of a patient suffering with malaria, there were found in the stomach wall characteristic encapsulated refractive pigment-containing bodies corresponding in every way to the extracorporeal stages of the tertian parasite. In two examples of the *Anopheles quadrimaculatus* fed upon a patient whose blood contained full-grown tertian parasites, Dooley, in their laboratory, had been able to obtain similar bodies. In one *A. quadrimaculatus*, fed upon the blood of a patient containing crescentic bodies, there were found in the stomach wall, about thirty hours after feeding, two lanceolate pigmented bodies in every way corresponding to the earliest stages of the extracorporeal phase of the aestival-autumnal parasite. The relation of the distribution of *Anopheles* to the prevalence of malaria had not yet been carefully studied in the United States. He concluded by saying that it might be considered as proved: (1) That the malarial parasite possesses an extracorporeal cycle which is completed in the stomach wall of mosquitos of the genus *Anopheles*; (2) that members of the genus *Anopheles* are capable of transmitting malaria from infected to non-infected individuals. There was reason to believe that if in any given region (1) proper measures for treating the spring relapses of malaria were adopted, and (2) efficient measures for destroying the dangerous mosquitos in their larval stage could be carried out, the prevalence of malaria might be materially controlled.

BACTERIOLOGY OF DYSENTERY.

Professor SIMON FLEXNER, who discoursed extemporaneously on this subject, said the attempt to establish a common etiological factor for all cases of dysentery had thus far failed. When one recalled the protean nature of other infectious diseases, among the most common of which were tuberculosis and typhoid fever, there could be no *a priori* objection to the hypothesis that the causative agency of dysentery need not necessarily vary for each of the many types of the disease that had from time to time been distinguished. That the lines of demarcation between the several clinical and pathological types should be inaccurate was not a matter of wonder. The terms "catarrhal," "tropical," "epidemic," and "diphtheritic" were far from signifying sharp-cut entities. The clinical manifestations and patho-

logical lesions of the catarrhal variety occurred in all kinds of dysentery and in all places where the disease prevailed. The distinction between tropical dysentery, which was characterised by ulceration and thickening of the intestines—especially the colon, the lesions beginning in the submucous coat of the gut—from the epidemic disease in which a false membrane existed, usually associated with ulceration without any primary involvement of the submucosa, was far from sharp and constant. In the United States diphtheria had not been commonly observed in the ulcerative and amoebic form of dysentery, while in Egypt the two pathological conditions were not infrequently found together.

SOCIOLOGICAL STATUS AND EVOLUTION OF THE PHYSICIAN.

At the second general meeting Dr. William Osler's name was down for a paper on Modern Therapeutics, but the audience was disappointed of the promised treat, as the popular Baltimore Professor was unavoidably prevented from attending the Congress. Dr. CLARENCE J. BLAKE delivered an address on the Sociological Status of the Physician, and Dr. S. WEIR MITCHELL afterwards read a poem entitled The Evolution of the Physician.

THE MEDICAL SCHOOL OF THE FUTURE.

In the evening an address on this subject was delivered by Dr. H. T. BOWDITCH, of Boston. He said one of the most hopeful signs of the times in the field of medical education was the growing tendency of the better schools to ally themselves to universities, and of universities to establish medical departments. It might be expected in the near future to find a better class of medical schools under the aegis of a university, and they might reasonably hope that this change would be associated with a diminution of the total number of medical schools, now so greatly in excess of the needs of the country. It seemed to be evident that, in arranging a course of medical study, a distinction must be made between those subjects which it was essential that every student should know, and those subjects which it is desirable that certain students should know. In other words, provision must be made both for required and elective studies. Anyone familiar with existing methods of medical instruction was aware that in nearly every department many things were taught which were subsequently found to be of use to only a fraction of those receiving the instruction. To indicate better the nature of the reform which he advocated he described a possible arrangement of a course of study in the department of physiology, with which he was more familiar than any other. An experienced lecturer would probably find it possible to condense into a course of about forty or fifty lectures all the most important facts of physiology with which every educated physician must necessarily be familiar. Attendance upon these lectures, combined with suitable courses of textbook instruction and laboratory work, would suffice to guard against gross ignorance of physiological principles. In addition to this work, all of which should be required, short courses of not more than eight or ten lectures each should be provided, giving advanced instruction in such subjects as the physiology of the special senses, cerebral localisation, nerve-muscle physiology, the internal secretion of glands, the physiology of the heart, circulation and respiration, the digestive secretions, the reproductive organs, etc. These courses should be elective in the sense that no student should be required to take them all. Each student might, however, very properly be required to choose a certain number of courses, which, when once chosen, become for the student choosing them required courses leading to examinations.

A similar arrangement of instruction could be advantageously adopted in the departments of anatomy, histology, bacteriology, medical chemistry, pathology, surgery, and in the courses of instruction in the various special diseases, such as dermatology, ophthalmology, etc. In the existing state of medical education the introduction of the elective system in some form or other seemed to be an essential condition to any further important advance, for the curriculum of most schools was already so crowded that no considerable amount of instruction could possibly be added.

If it were urged that the elective system in medical educa-

tion would lead to the production of a class of physicians who, owing to the early specialisation of their work, would be inclined to overrate the importance of their speciality, it might be pointed out that this result was apt to be due not so much to early as to imperfect instruction in the work of a specialist, and that since the elective system tended to encourage thoroughness in special instruction, the evil might be expected to diminish rather than to increase. He proceeded to discuss how far the didactic and the laboratory methods of instruction were each adapted to secure these two objects of medical education, the distribution of the student's work, and the question of examinations.

In conclusion he said it might be expected that a medical school of the first rank would in the immediate future be organised and administered somewhat as follows: (1) It will be connected with a university, but will be so far independent of university control that the faculty will practically decide all questions relating to methods of instruction and the personnel of the teaching body. (2) It will offer advanced instruction in every department of medicine, and will therefore necessarily adopt the elective system of some sort, since the amount of instruction provided will be far more than any one student can follow. (3) The laboratory method of instruction will be greatly extended, and students will be trained to get their knowledge as far as possible by the direct study of Nature, but the didactic lecture, though reduced in importance, will not be displaced from its position as an educational agency. (4) The work of the students will probably be so arranged that their attention will be concentrated upon one principal subject at a time, and these subjects will follow each other in a natural order. (5) Examinations will be so conducted as to afford a test of both the faithfulness with which a student performs his daily work and of his permanent acquisition of medical knowledge fitting him to practise his profession.

THE WORK OF THE COMPONENT SOCIETIES.

The Association of American Physicians.—The PRESIDENT of this Association (Dr. E. G. Janeway, of New York) showed a commendable example of self-restraint by not delivering an address, or, as he himself put it, by not consuming such time by his introductory remarks as to infringe upon what was the moral right of the members. But for this, he said, he would have been tempted to touch upon the theme, Truth in Medicine. This could have been handled under such heads as truth in statistics, truth in diagnosis, truth in therapeutics, and truth in pathology. Among the papers read were A Communication on the Relation of Uric Acid Secretion to Epileptic Attacks, by Dr. JAMES J. PUTNAM, of Boston, and Dr. F. PFAFF; one on Sanatorium Treatment of Pulmonary Tuberculosis and its Results, by Dr. E. L. TRUDEAU, of Saranac; and one on the Organism and Lesion of Actinomycosis, by Dr. J. H. WRIGHT, of Boston. Pernicious Anæmia was dealt with by Dr. RICHARD S. CABOT, of Boston, who gave the results of a study of 110 cases; Dr. FRANK BILLINGS, of Chicago, who reported on the "blood-findings" in 19 cases, and Dr. F. H. HENRY, of Philadelphia, who dealt with the clinical side of the question. On the third day Drs. F. F. WESBROOK, WILSON, and McDANIEL discussed the varieties of the diphtheria bacillus; Dr. W. H. PARK, of New York, read a paper on the Elimination of Deleterious Substances from Antitoxic Serums; Dr. W. W. JOHNSTON, of Washington, presented a case of Addison's Disease under Treatment with Suprarenal Extract. Professor H. A. HARE, of Philadelphia, read a paper on the Attitude of the Physician and Surgeon to Appendicular Symptoms Complicating Typhoid Fever. The opinion was expressed that the absence of leucocytosis was an indication that a given case was not one of appendicitis, but it was not pathognomonic. Dr. IRA VAN GIESON, of New York, said he thought attacks of appendicitis were the result of the evolution of the species, providing for a race in which the appendix would be absent. Professor H. WELCH was elected President for the ensuing year.

American Surgical Association.—The PRESIDENT, Dr. F. Weir (New York) delivered an address on Perforated Ulcer of the Duodenum. The surgery of the gastro-intestinal tract bulked large throughout the proceedings, indeed almost to the exclusion of any other topic.—A full-dress debate on the Surgery of the Stomach was opened by Dr. W. W. KEEN (Philadelphia).

—Dr. Roswell Park (Buffalo) was elected President for the ensuing year.

American Gynecological Society.—Dr. G. G. ENGELMANN (Boston), who presided, delivered an address in which he dealt with menstruation. He said many investigators had shown that the wealthy and the city-born were more precocious than their poorer or their country-bred sisters, but his own investigations more especially indicated the influence of mental stimulus. Thus, out of 2,315 patients who came under his observation in St. Louis dispensaries, the average age at which menstruation commenced was 14.24 years, while Dr. Chadwick of Boston had found much the same, for in his 2,500 cases the age was 14.3 years. In 697 cases from a consulting practice throughout the south-western States, country-bred women, the average age was 14.3 years. The average in 800 cases among Boston's highest class working girls was 14 years. Among the high and normal school girls, the 750 of whom statistics were collected gave the average of 13.8 years. In 1,200 college girls the average was 13.5 years. Neither birthplace nor parentage influenced the development of the girl and the appearance of puberty as did the surroundings of childhood and early youth, which gave a variation of one year, as noted in the 5,000 cases which had been under observation. Among other matters discussed the results of conservative operations on the ovaries and tubes, a subject which was introduced by Dr. W. L. BURGESS (Boston). His conclusions were that it is advisable to do conservative operations in all cases when the ovaries and tubes are not hopelessly diseased in all parts of their structure, except on patients who are near the menopause; on patients who have pronounced gonorrhœa of long standing, and in cases of malignant disease.—Dr. A. W. JOHNSTON read a paper on the Internal Secretion of the Ovary. He said there was no proof that the ovary had any function other than the manufacture of eggs. It was in no sense a gland. The results produced by the administration of ovarian extract could be produced equally well by salt and soda, as hysterical patients were easily influenced. He condemned the practice of preserving a part of the tubes and ovaries as simply a postponement of trouble.—The Anastomosis of the Ureters with the Intestines was dealt with by REUBEN PETERSON (Chicago) and Dr. J. W. BOVÉE (Washington).—Dr. THADDEUS A. REAMY (Cincinnati) contributed a paper on Bronchial Disease not invariably a Contra-indication for Ether Anæsthesia in Abdominal Surgery, based on an experience of 8,000 cases. The prejudice against the use of ether in the presence of acute, subacute, or even chronic bronchitis, was largely unfounded, provided proper conditions were observed in its administration. These conditions included proper preparation of the patient, that this anæsthetic be administered in the operating room, the temperature of which must be from 98° to 100° F., the chest and trunk of the patient lower than the pelvis and lower extremities, and the ether of pure quality.

American Pediatric Society.—Dr. HENRY KOPLIK delivered an address on the Ambulatory and Hospital Management of the Gastro-intestinal Derangements of Infancy in the summer months among the poor of large cities.—Dr. EDWARD P. DAVIS (Philadelphia) presented a paper on the Treatment of Hydrocephalus by Craniectomy. He did not think the operation was curative, but perhaps it might be palliative, the child being more comfortable for the time being.—Dr. A. D. BLACKADER presented a paper on Enteric Fever in Childhood. The regular and systematic employment of the cool or cold bath in the treatment was of great value. He thought it might be employed regularly without too rigid adherence to the rule of Brandt of only using it when the fever reached 102.2°.—Dr. W. S. CHRISTOPHER (Chicago) read a paper on the Measurement of Chicago School Children. The test consisted in lifting at each alternate second with the middle finger of the right hand a weight equal to 7 per cent. of the gross weight of the individual, and permitting them at the next second to return. Ninety seconds was the limit of the test, during which time this weight was lifted forty-five times, a metronome being used to beat the seconds. The ergogram indicated the degree of fatigue exhibited by the child during the ninety seconds. The work of the boys was better than that of the girls; the endurance of the girls up to 14 years of age showed a greater percentage than that of the

boys. The girls practically reached a maximum at 14, and from there on up to 20 years of age the limit of examination did not increase. The boys, however, continued to increase continuously up to 20, and the ratio of increase was greater than it had been previously. The amount of energy displayed by the girls at 20 amounted to very little more than half of that exhibited by the boys at the same age, so marked was the differentiation in the sexes at this time.

[Abstracts of the more important work presented at the meetings of these Societies and at those of the American Neurological Association, the American Association of Genito-urinary Surgeons, the American Climatological Association, and the American Laryngological Association will be published in due course in the *EPITOME*.]

THE ROYAL MEDICAL BENEVOLENT COLLEGE.

THE annual general meeting of the Royal Medical Benevolent College was held on May 25th, Dr. HOLMAN, Treasurer, in the chair. The annual report stated that in spite of the war appeals the receipts, both from annual subscriptions and from donations for general purposes, were higher in 1899 than in 1898. Special thanks were due to the Honorary Local Secretaries for their efforts in obtaining annual subscriptions. Two special donations had been received—one of £500, generously given by a governor whose brother had intended to leave that sum, but had died before signing his will; and the other of £458, given by "A few old friends in memory of the late Miss Elizabeth Salmon, of Clifton." The scrutineers had announced the result of the voting as follows:

Pensioners Elected.—Annie Blick, John Charles Bonnett, Elizabeth M. Solly, William Dewsnap, Margaret Keith, Ellen Wilson, Anne Winearll Osborne.

Foundation Scholars Elected.—Edward R. L. Warren, Gerald Percy Adams, Charles R. Hamilton, Cuthbert W. Ellison.

Vacancies having arisen within the prescribed time, three foundation scholars had been admitted by the Council after the last election—Edward Chamberlayne, Alan H. Parson, and Robert H. Shillingford. A further sum of money having been received out of court for the Da Silva Foundation the Council had awarded another pension, so that there were now two pensioners on that foundation. The election that day brought the number of ordinary pensioners up to 50, of Pugh pensioners to 9, and of Morgan annuitants to 3. The Council had to regret the loss by death of two vice-presidents—Sir James Paget and Mr. John T. Mould—while Sir Edward Sieveking, who was the first honorary secretary, and had been for many years a member of the council, had resigned owing to advancing years and ill-health. The Duke of Abercorn had resigned the office of president, and the Council proposed the Earl of Rosebery for election in his place. The number of boys in the school was 238, and numerous successes had been obtained by boys leaving the school and by old boys during the year.

Dr. HOLMAN, in moving the adoption of the report, said: The policy of the Council has been to prepare students for entering the profession of medicine, and to give to all pupils, whatever the course intended for them, a sound all-round public school education, that they may be fitted to act not only as medical practitioners or otherwise, but also to hold their own socially in the neighbourhood in which they live. This is in exact accordance with the wishes and aims of the founder of the College. Epsom College is not a class school, but offers special advantage to the sons of medical men. The days of class schools are practically at an end, and it is desired to make Epsom College to all intents and purposes a public school with a medical foundation. Years since it was a common complaint by doctors that they were not given any social status either in private practice or in the public services. It was evident to anyone looking into the question that one cause was the frequent absence of general culture and tone in those who were complaining. The object at Epsom is to turn out well-educated gentlemen and students of good tone and high aims, and our experience is that by giving our students the widest education possible we are enabled not only to pass a large proportion through the stiffer medical examinations, but also to ensure their continuing to do well by the avoidance of any sort of cramming. We can often carry them further still, and secure University distinctions. I am referring mainly, of course, to those boys

intended for the medical profession. Our average number of passes in the Matriculation and Preliminary Scientific Examinations of the University of London on which many, not all, of our valuable hospital scholarships depend will compare favourably with those of any other school. Of late years we have also gained constantly University Open Scholarships, won straight from Epsom. Between Founder's Day, 1896, and Founder's Day, 1899, ten open scholarships or exhibitions at the Universities have been gained. The two in 1899 were for mathematics. In the *BRITISH MEDICAL JOURNAL* of this morning (May 25th) are published the results of inquiries by the General Medical Council into the preliminary examinations in England and Wales by various examining bodies. At the matriculation examination of the University of London, the percentage of rejections among all candidates is given as 52.2, of candidates from Epsom College it was in round numbers 35 per cent. At the Oxford and Cambridge School examinations for the Higher Certificate the rejections are given as 43.7 per cent.; of Epsom candidates it was, in round numbers, 20 per cent. For the Lower Certificate the rejections are given as 44.3 per cent.; of Epsom candidates it was, in round numbers, 25 per cent. The general result is sufficient to show that our teaching is well up to the mark. Some little time since my attention was drawn to the fact that we could not fill up annually the nine free scholarships most generously given us by the Metropolitan hospitals. In all cases it was formerly a *sine quâ non* that the student should have passed both parts of the Preliminary Scientific Examination of the University of London, and in three hospitals the first division was required. From our school of under 250 boys, not all of whom enter the medical profession, we could not find 9 students out of some 50 leaving each year able to gain these valuable and much coveted honours on such conditions, and it is clearly too much to expect. The senior form has sometimes had less than 9 boys. This Preliminary Examination is composed of three subjects, two of which must be taken together, and one standing by itself. The candidates from all parts, and from many schools and hospitals, vary in age from 17 to 25 years and upwards. I found that by far the larger portion of these candidates took this examination in two parts, and the proportion passing in all three subjects at once was very small indeed, and is growing smaller each year. It is no part of my duty to ask why this should be the case; whether it be the result of stiffer examinations or the poorer mental calibre of the candidates, but this discovery gave an ample answer to our position with the hospitals; and when the whole question was laid before the Deans of the various schools they at once allowed their scholarships to be awarded to students who had passed a portion of this examination, on the obvious condition that the remaining subject or subjects be passed so soon as possible. That the Deans thought our application a reasonable one was clearly shown by their ready acquiescence with our request. That every year the candidates going up for certain examinations vary much in quality is the experience of all teachers, and that all candidates with the very best intentions, and every assistance from their masters, can be made to pass such examinations is again an assertion opposed to the experience of all schools. The estimation in which a Wrangler's degree is held by university men varies greatly, depending upon the class of men who are competing in each particular year. That our boys, as a rule, do succeed in these higher examinations is incontrovertible. In 1899 9 lads went up for the Preliminary Scientific Examination and 6 passed in all subjects, one in Division 1, whilst the two others passed in one part of the examination, and one failed. Two forms, 25 in number, were sent in bodily for the matriculation, and 16 passed. After much thought, and acting on the advice of our head master and other educational experts well qualified to advise, the whole form is usually sent in. A large percentage are expected to pass; the remainder get over the stage fright of their first interview with the examination papers, and also learn what subjects they are weak in, and to which they must give more attention. It is helpful both to teacher and taught, and a sure test of general efficiency. I wish it to be thoroughly understood that every boy intended for medicine is given the best possible attention and every chance of success by careful preparation and even (when necessary) by extra tuition, and I may also assert that boys