

PROF. YOUMANS.

E. I. Youmans was born in Albany County, N. Y., in 1820—but grew up in Saratoga. He went to the Common School, but early contracted a disease of the eyes which blinded him for many years and leaves him still with very imperfect vision. This made collegiate education impossible. He early took interest in scientific subjects and had scientific books read to him. Chemistry was at first a favourite subject which he studied with the aid of his sister, Miss Eliza A. Youmans, who made the experiments. By the aid of a machine which he invented, and the partial recovery of sight he wrote the class book of Chemistry for Common Schools which was published in 1852. After this he lectured extensively before Lyceums and was perhaps the first to popularize the new doctrines of the Conservation and Correlation of forces, upon which he subsequently compiled a book. Always interested in scientific education he edited in 1864 a volume entitled "The Culture Demanded by Modern Life."

Mr. Youmans's interest in the general subject of scientific culture and in the advanced philosophical ideas of the age which are the results of scientific progress, induced him to exert himself for the reproduction in the United States of the able works of British thinkers, such as Mill, Bain, Spencer, Maudsley, Huxley, Lecky, Tyndall, Darwin, Carpenter and others, and he exerted himself to bring about an arrangement on the part of the American publishers with whom he was associated to pay foreign authors in the same way that American authors are paid. By devoting himself much to the diffusion of their ideas and laboring to create a demand for their books his policy proved so very successful that the practice first systematically carried out by D. Appleton & Co., has been extensively adapted by other publishers with a corresponding advantage to foreign writers.

In 1872 Mr. Youmans became much interested in the question of International copyright and went abroad to organize the International Scientific Series on the basis of a simultaneous publication in different countries of scientific books under which equitable payment should be made to the authors. It was his hope that by establishing such an international arrangement spontaneously and getting the rights of authors conceded on a commercial basis by the voluntary engagements of publishers, that the American government might then be induced to recognize and give legal security to the literary property that has been thus far unprotected by law. There are but few symptoms of any such governmental action, but a valuable series of scientific books has at any rate been secured and all their authors handsomely paid.

In 1872 Mr. Youmans also established the *Popular Science Monthly* to give currency to a class of articles that but rarely make their appearance in the literary periodicals. The Magazine went up to a successful circulation at once and has continued to hold an influential position as an organ of scientific thought upon all the broader and higher questions of the time.

Mr. Youmans has never been able to devote himself to the work of scientific research, being crippled in this respect by his imperfect vision, but feeling that the work of diffusing the great results of modern scientific activity is only next in importance to that of creating science itself, he has worked industriously in this field and has won conspicuous success.

THE EGYPTIAN SOLDIER.

When we hear of Arabi's recruits coming in bound with chains, we instinctively feel that as soldiers they will be worthless. The Egyptian fellah is not warlike. A handsome bounty with the prospect of a pension might tempt a few men to join the ranks, and in times of dearth and peace probably would be sufficient to attract considerable numbers. But in time of war the treatment the soldiers have always received has been calculated to deter rather than to allure them. The recruit so obtained is a reckless, hopeless savage. He is worse than a convict, for he looks forward to no alleviation of his lot. The Egyptians in slavery in Abyssinia probably accept their present situation with resignation. A slave is no worse off than a soldier. In the East, indeed, the slave is the best off; and a slave in Egypt is in a far better position in every respect than a soldier. Ismail Pasha conceived the brilliant project of assimilating the two callings. At a time when he wanted to stand well with England he signed a decree abolishing the slave trade, and people who knew him were astonished. Their astonishment was turned into something more akin to admiration when they were able to judge by subsequent events. The sources of the slave trade were not touched. The caravans, in spite of all that a few honest commissioners could do, were allowed to commence their journeys from Darfour or Kordofan. They were even allowed to come to the Nile bank. There the Khedive's agents stopped them. The slave trade was abolished in Egypt. Slaves were contraband, and were seized by the Government. Arrangements were of course privately made with the merchants, who would come in the most innocent and confiding manner to places where they knew the inexorable agents of the Viceroy would take their slaves from them. Yet they came, time after time, year after year, and it was not very difficult to throw dust in the eyes of the few English abolitionists who were on the spot. Every negro thus captured was set free—free, that is, to go into the army. Of the

regular forces in Egypt last year more than a half consisted of the negroes obtained in this way by the late Khedive, or of young men born of the imported negroes, most of whom were married to negroes captured by the same simple process. These black regiments are by far the best looking in the Egyptian army. They are better drilled, march better, and have a more soldierly air than the brown-skinned natives. But when they encountered the cold of the Balkan campaign in the war with Russia, when Ismail sent a contingent to help his sovereign, they were useless. They could not face wintry weather, and it was not ascertained whether they could face Russian bullets, for they ran while the enemy was yet a great way off. When the survivors of them returned to Egypt, the Khedive endeavoured to get up a kind of public reception; but even in Egypt there is a certain amount of information abroad, and their cowardice was too well known, even if it had not been signalized by the insult which the Sublime Porte put upon the doubly unfortunate Prince Hassan. He received the lowest rank of the Turkish order as an acknowledgment of his brilliant feat of arms; and his father had to receive the questionable decoration for him as if it had been a real honour, and guns were fired at Cairo and trumpets blown about the streets for several days, while his negro soldiers were marched up to the citadel through the city, carrying banners, and probably quite unconscious of their ridiculous aspect. The truculent behaviour of the black soldiers became eventually too much, and some English travellers having been insulted, and one even robbed, remonstrances led to a slight diminution of their military ardour. With the downfall of Ismail the Government practically lost its hold of these regiments, and it remains to be seen whether Arabi will succeed better. It is possible that they may show fight in a suitable climate; but no very stubborn resistance is to be expected from them. The larger part of the Egyptian army as it is now consists of very different materials. The negro soldier was at least well drilled. He could walk in step, and keep something like a line. But the so-called Arab soldier can do neither. A more melancholy exhibition than the march of an Arab regiment through Cairo it is impossible to conceive. The face of every man tells its own tale of suffering and wrong. The negro looks fat, careless, and merry. The fellah, torn from his home, chained, beaten, deceived, looks as if fear and anger were the only emotions of which he had any knowledge. He slouches along, stooping under his rifle, walking in any step he can command, his feet unaccustomed to boots and his body to straps. When we see the fellah at home, perhaps working in his fields or raising water from the Nile by the familiar *shadoof*, he is like a magnificent antique bronze. His muscles stand out glistening in the sun, and his air is that of a man who can enjoy his work and who knows he does it well. When you see the same man turned into a soldier everything is altered. Instead of being elevated, he is degraded, and his whole bearing shows it. He has been changed from a civilised man into a savage; and the pity of it is the greater when we reflect that to make a bad, cowardly, mutinous soldiery the land is robbed of its cultivators and whole villages impoverished or depopulated. Millions of acres might be added to the cultivable soil if labour were more abundant. Egypt has no men to spare for soldiers, and has, moreover, no need of any but the smallest possible army—a police force, in short. The people are easily governed, and the country has no need of foreign conquests. It is, in fact, idleness as much as anything else which has brought the Egyptian army into open rebellion.

OUR ILLUSTRATIONS.

The "naval armored railway train" mentioned in the accounts of the fighting in Egypt, is the subject of this illustration, being a complete novelty in military practice, at least in Europe; though it is said that there was something like it in the American Civil War. This locomotive fortress consists of six trucks protected with iron shields, the engine being in the centre. A Nordenfeldt gun looks over the bows of the leading truck, and three Gatlings over the stern of the hindmost. The men in the trucks are protected from musketry by a row of sandbags. Two field guns are carried in one of the other trucks or wagons, built for heavy weights; but it is intended to place a seven-ton gun in this wagon. The train is manned by two companies of the *Alexandria* blue-jacket and one company of those of the *Indefatigable*, to work the guns, under the command of Commander Hammill, having under him Lieutenants Hamilton, Bailey and Younghusband, Captain Fisher, of H.M.S. *Indefatigable*, assisted by Lieutenant Poore, contrived the whole affair, and superintended its construction and equipment, afterwards directing its movements, with two hundred picked men to form the proper crew. The train is provided with mines, electric gear, and all appliances for laying down or destroying rails. It is also furnished with a powerful steam-crane for shifting guns and other heavy articles. An empty wagon goes before the train, and can be shunted forward, the train stopping, from time to time, to try whether the line is clear, and to explode any mines that may have been laid beneath the rails. General Sir A. Alison and Col. Duncan, before the reconnaissance of Saturday, had made several trips in this train, up to within a short distance of Arabi Pasha's fortified camp, accom-

panied by Messrs. Wright and Donald, engineers of the railway.

CETEWAYO IN ENGLAND.—Three years have passed since the unfortunate King of the Zulu nation, after defending his country against the invading British army with admirable courage, was defeated and hunted down, an almost solitary fugitive, captured and shipped off to Capetown, where he languished many months in close imprisonment, and was latterly permitted to dwell with a few companions at the residence assigned to him on the shore of Table Bay. He has now been allowed to come to England, at his own earnest desire, wishing to speak face-to-face with Queen Victoria and the ruling statesmen of the British Empire, confessedly in the hope of persuading them to restore him to his kingdom. It may well be considered doubtful whether such a measure would now be expedient for the welfare of Cetewayo himself, or that of his fellow-countrymen; while it would scarcely be just to the Dutch community of the Transvaal, with which he was always at enmity, to replace him in the power that he formerly exercised on their Utrecht frontier and on the Pongolo river; since we have recently given back self-government to the Transvaal with express conditions designed to secure their peaceable relations with the native races on their borders. This alone may appear to be a sufficient objection to the romantic scheme of setting up Cetewayo once more as King of the Zulus; but he is fairly entitled to the personal respect due to a Prince visiting England, and that which is due to a brave, loyal, honourable man, whose character and conduct, in all his dealings with the English in South Africa were really above reproach. The amazing misconception or misrepresentations that led to the unhappy Zulu War have ceased to prejudice the English public upon this subject; and it is acknowledged that Cetewayo never showed the slightest hostility to the colony of Natal, and that he was most unfairly treated in the award concerning the Transvaal frontier. No confirmation has been produced, moreover, of the vague rumors that were current, upon one or two occasions, in the default of official testimony or inquiry, concerning supposed excessive cruelties practised in Cetewayo's rule over his own subjects. For a native African ruler, he was certainly as good as any other; but it does not follow that he should, under present circumstances, be allowed a second reign. Let him be entertained with frank courtesy and judicious hospitality; let him see the marvels of European civilization; and when he returns to South Africa let him be handsomely provided for, as a native gentleman of the highest rank, the pensioned guest of the British Government, to the end of his life.

COMMANDING OFFICERS IN EGYPT.

We present, on a page of this week's publication, the portraits of the General Commanding-in-Chief the principal members of the General Staff, the Generals commanding the two Divisions.

The Commander-in-Chief is well known in recent British military history. Lieutenant-General Sir Garnet Joseph Wolsley, G.C.B., G.C.M.G., son of Major G. J. Wolsley, of the 25th Regiment of Foot, was born at Golden Bridge House, near Dublin, June 4, 1833, and entered the Army as ensign in 1852. He first saw service in the Burmese war of 1852-3, after which he distinguished himself in the Crimea, and was severely wounded before Sebastopol. He gained distinction also in the Indian Mutiny and Chinese war. As Deputy Quartermaster-General in Canada he commanded the Red River expedition, and subsequently, in 1873, was sent out to direct the operations against the Ashantee tribes. For his services there he received the thanks of Parliament. The next occasion on which Sir Garnet saw active service was in 1879, when he conducted the operations against Secoceni, whose stronghold he destroyed. Sir Garnet, besides his military employment, has held civil posts under the Colonial Office. In 1874 he was dispatched to Natal to administer the government of that colony; in 1876 was appointed a member of the Council of India, and in 1878 the administrator of the island of Cyprus. In 1879 Sir Garnet went out as High Commissioner of the Transvaal and Natal, and reorganised the affairs of Zululand. Coming home in 1880, he was appointed Quartermaster-General at the Horse Guards, and has lately succeeded Sir Charles Ellis as Adjutant-General of the Army.

Lieutenant-General Sir John Aclay, B.A., K.C.B., who has been appointed Chief of the Staff and second in command of the Army in Egypt, is son of Major James P. Aclay, B.A., and was born on Nov. 1, 1819. He was Assistant-Adjutant-General of Royal Artillery during the Crimean War, and was present at the affairs of Bulganac and M'Kenzie's Farm, the battles of Alma, Balaclava, and Inkermann, capture of Balaclava Castle, and the siege and fall of Sebastopol. He has the medal with four clasps, C. B., Commander of the Legion of Honour, Fourth Class of the Medjidie, and Turkish medal. He held the same appointment in the Indian Mutiny, and saw the hard fighting round Cawnpore, and was present at the action of Pandoo Nuddee on Nov. 26. He was present at the defeat of the Gwalior Contingent on Dec. 6, 1857. He was employed on special service against the North-West frontier tribes in the Afghan Sitana campaign of 1863-4, and was present at the storming at Laloo, capture of Umbeylah, and the destruction of Mulkah. He was

Director of Artillery and Stores from 1870 to 1878; he was Governor of the Woolwich Royal Military Academy from 1875 to 1880, and has been Surveyor-General of Ordnance from 1880. He has thus served in the principal Army Supply departments of the War Office, and has had great experience in all the details of the equipment of an army.

Lieutenant-General G. C. Willis, C.B., who will command the first Division, was born in 1832. He served with the 77th Regiment during the first part of the war in the Crimea, and was appointed, in 1875, Deputy Assistant Quartermaster-General at the head-quarters of the army there, and subsequently Assistant Quartermaster-General of the 4th Division. He has been at different times Assistant Quartermaster-General at Gibraltar, Assistant Adjutant-General at Malta, Assistant Quartermaster-General of the Southern District, and has held a similar appointment at the Horse Guards. In 1878 he was appointed Major-General in command of the Northern District. His commission of Lieutenant-General bears the date of 1880.

Major-General Sir Edward Bruce Hamley, R. A., K.C.M.G., C.B., who has been appointed to the command of the 2nd Division, served in the Crimean campaign in 1854-5, including the affairs of Bulganac and M'Kenzie's Farm, the battle of the Alma, where his horse was shot; Balaclava, and Inkermann, where his horse was killed; the siege and fall of Sebastopol, and repulse of the sortie on Oct. 26, 1854, when he was mentioned in despatches. He was appointed as her Majesty's Chief Commissioner for Delimitation of Bulgaria in 1879, and of the Turco-Russian frontier in Armenia in 1880. He is the author of a valuable military work called "The Operations of War."

Major-General his Royal Highness Arthur, Duke of Connaught, K.G., K.T., K.P., G.C.M.G., was born May 1, 1850; entered the Woolwich Military Academy as cadet in 1866, became a Lieutenant in the Royal Engineers in 1868, and a Lieutenant in the Royal Artillery in 1869, a Lieutenant in the Rifle Brigade in the same year, and a Captain in 1871. His Staff services are:—Brigade Major at Aldershot in 1873; Brigade Major to the Cavalry Brigadier at the same quarters in 1875, in the October of which year he was appointed Assistant Adjutant-General at Gibraltar, which post he held until April, 1876. In 1880 he was made a General of Brigade at Aldershot. Besides holding other appointments, the Duke is Colonel-in-Chief of the Royal Rifle Corps and personal Aide-de-Camp to the Queen. His Royal Highness has never before taken part in active service, and, as we have previously announced, he will now command the Guards Brigade in the first Division. It will be remembered that the Duke of Cambridge commanded the Guards in the Crimean War.

Major-General Sir Evelyn Wood, G.C.M.G., K.C.B., V.C., who has been appointed to the command of the 4th Brigade, was born in 1838. He entered the Navy in 1852, and served in that profession during the Crimean War. In 1855 he took a commission in the Army. He served in the Indian Mutiny, where he gained his Victoria Cross. In the Ashantee War, under Sir Garnet Wolsley, he organised "Wood's Regiment of Natives." He served in the Old Colony War in South Africa in 1879, and throughout the Zulu War he commanded a flying column in General Newdigate's Division. When the Boer War of 1880 broke out, Sir Evelyn Wood again went out to South Africa, and, on the death of Sir George Pomeroy Colley, he succeeded to the command of the troops in Natal and the Transvaal. Sir Evelyn has held several staff appointments, and was lately commanding the Chatham District.

NEWS OF THE WEEK.

THE Coroner's jury in the Joyce case, found a verdict of murder by persons unknown.

THE system of signals between Arabi's camp and Alexandria has been discovered.

CHILIAN troops have burned six Peruvian villages, rendering 3,000 persons homeless.

A DUBLIN telegram announces that Charles Kickham, the Fenian, is dying of paralysis.

A WARSAW despatch reports a renewal of outrages against Jews in the interior.

THE Archbishop of Canterbury is suffering from fever and congestion of the lungs.

A London despatch says Leigh Smith and the other members of the Eira crew have been rescued.

LEE won the professional single sculls at Saratoga, Courtney second, Wallace Ross a bad third.

THE Lord Lieutenant of Ireland has declined to interfere with Justice Lawson's decision in the Gray case.

ARABI accuses DeLesseps of having deceived him with promises, in order to sell the Suez Canal to the English, and has set a price on DeLesseps' head.

IT is feared that Arabi has diverted the course of the Freshwater canal, as the water is perceptibly falling at Ismailia.

SIR GARNET WOLSELEY has decided to push on into the interior at once. A tramway is now in process of construction between the quay and the railroad station.

DAMIETTA has been captured by the British. English subjects were found there who for six weeks past have been loaded with chains and subjected to most horrible cruelties.