Contents of our Contemporaries.

Colburn's United Service Magazine for December is an exceedingly good number. Col. Knollys continues his analysis of the mobilization of the first army corps; a foreigner discusses the army gun question, and comes to the conclusion that repeating rifles are a great mistake. The Clapham Cab Co., limited, is a sketch of specious investment, with the usual moral, that men should not meddle with what they don't understand; and Capt. Gooch, R.A., begins a narrative of a trip across Vancouver Island in 1857. The number contains some shorter articles and the usual reviews and editorial notes.

The Rifle for December was promptly at hand. The crack shot whose record is given this month is Mr. Geo. C. Thaxter, of Nevada, who has confined his practice to the military weapon, and uses a standing position in which his left arm is supported by his body and hip. The chief editorial is on the improvement in military shooting in the United States; the new Winchester rifles and cartridge are described; Mr. Lowe contributes an article on revolvers, which we have reproduced, and Franc Tireur, their English correspondent, dilates upon the Enfield muddle and the new musketry regulations.

The English weeklies for the 11th, and the *U. S. Review* for the 14th, have been received. We draw attention to the following articles as likely to be of general interest:

Broad Arrow.—Modern languages in the army. Another submarine boat. The military governor of to-day. How to defend our coasts. The Canadian artillery at Shoeburyness; a letter from Lieut.-Col. A. H. Macdonald, Guelph. The record of 1st battalion, the Border regiment (34th). The usual interesting short notes.

United Service Gazette.—Machine guns. Imperial federation. Canadian horses. The reports on the R.M. College and Academy. A lecture on the new rifle.

Admiralty and Horse Gaurds Gazette.—Coast defence. Naval and military anniversaries. Prince Alexander of Battenburg. Experiments at Lydd with machine guns. The beginning of an essay on cavalry by Capt. Grierson, R.A.

The Volunteer Service Gazette turned up missing.

The U. S. Review.—The Queen's jubilee; the war game and short editorial items.

The Volunteer Record (which is most welcome after forsaking our exchange table for several months, and is much improved in make up). A historical sketch of Lieut.-Col. C. T. Burt, captain of the English twenty. The elements of tactics III, by Lieut.-Col. Haldane. Gossip.

Quick-Firing Guns in Field Operations.

OUR Austrian contemporary the *Armeeblatt*, in its issue of December 7, contains the following instructive paper:—

The value of quick-firing guns for the defence of fortified places on the coast will be found chiefly from the successful English trials (at Lydd and Inchkeith). The modern coast batteries are armed with powerful artillery of large calibre, which certainly have a destructive effect, but also fire very slowly. It is not to be denied that they are necessary to combat the ironclads; but these are not the only adversary of a fortified coast, for, after an important point on the coast has been attacked, there will be the enemy's torpedo-boats, sloops, landing troops, and the men in the tops and on the bridges, as well as the ironclads to fire on. For this purpose, where the resistance is less, the powerful penetration of the heavy ironclad guns is not necessary, but, on the contrary, easily movable and quick-firing guns are wanted to be able immediately to fire on those enemies who, generally unexpectedly, turn up and quickly disappear. The heavy coast guns are naturally, from technical as well as economical reasons, not suitable, for it would be difficult to fire with them on those quickly-changing targets, whereas it is easily done by the quick-firing guns. If the enemy's landing troops appear in an unexpected disection, it may happen that the few heavy coast guns cannot be trained that way, whilst the quick-firing guns, by reason of their small cost, can be had in greater number and all along the defence line, so that some of them can work even in improbable attack directions, where hardly attacking ironclads may be feared; so that the quick-firing guns find targets only corresponding to their power, and are able to cover with a much more effective fire in a short time than can be expected from heavy coast-batteries with their slowness of fire, even under the most favorable circumstances. Should there be any point without any guns, it will, in case of necessity, only take a short time and few men to procure or bring up some quick-firing guns. In favor of introducing these guns in coast fortifications, where generally there is a want of space, is also the little room the quick-firing guns require. They only take 1 mètre, which has never been enough for any other light guns hitherto made.

The penetrating power of the 47-millimètre Nordenfeldt armor-piercing shells, fired with higher muzzle velocity, would probably be sufficient to pierce the boiler-plates and other important parts of torpedo boats, or similar vessels, even at 2,000 mètres; but it is always advisable to rely on a certain excess of power, and to employ for armament of coast fortifications the Nordenfeldt 57-millimètre quick-firing gun, which is a little heavier, but ever so much more useful, than the 47-millimètre gun. If one is in want of a specially mobile quick-firing gun also, the light 47-millimètre gun may be sufficient, the efficiency of which is only one-fourth less than the first-mentioned heavy gun of the same calibre.

For the employment of quick-firing machine guns in fortress defence generally, that opinion may be considered right which is given of mitrailleuses employed for the same purpose. The first-mentioned guns will meanwhile already in the beginning of seige attacks, where the heavy guns of the place can only co-operate very little, play an important part in an active defence of the most advanced outposts, where it is not a question of combating objects able of resistance (batteries, etc.), but to overwhelm the besieging army with murderous fire from easily movable guns. The batteries erected during the defence will have to be cleared of their fortress guns, so as not to leave them to the enemy. Here you can put in some mobile quick-firing guns to oppose the shortness of the advance (by a violent attack), also perhaps at the last moment to retire. For all this, as well as for all the purposes mentioned in connection with the mitrailleuse, the light 47-millimètre Nordenfeldt machine gun, with its great mobility and a metal rain considerably heavier than that of any of the usual field guns, is very well qualified, especially if the field carriage has a steel shield to protect the gunner from rifle fire.

This calibre is also fully qualified for better commanding the ramparts of a fortress, and a larger range than the mitrailleuse. To command the trenches a gun is wanted that at any time, day and night, under all circumstances, can be ready to fire and to send in the shortest time the greatest possible number of murderous projectiles spreading equally in the trenches, which projectiles also by their own shells are enough to destroy the means of the enemy passing through the trenches. For this purpose Nordenfeldt has constructed a special 57-millimètre Camponnière gun, the case shot of which contains 135 lead bullets, so that by quick firing, with fixed aim at 32 shots per minute,* 4,320 bullets sweep through the trenches, when, by the very ingenious placing of the lead bullets in the case shot, these are equally spread, so as to cover the whole of the ditch.

To the above figures of about 4,300 bullets per minute, one can put down as a counterpart the number of 500 bullets fired at five shots per minute from a flanking gun, the cartridges of which, for instance, contain 100 small bullets; but Nordenfeldt's 57-millimètre Caponnière gun fires also a 2·72 kilogramme heavy shell with 441-millimètre muzzle velocity.

This is fixed on a pillar (without recoil), for adjusting (for vertical and horizontal directions) are used a fixable screw and worm-wheel. All these qualities make the Nordenfeldt 57-millimètre Caponnière gun priceless, and give to it (after General Brialmont) the following advantages compared with the flanking revolver gun, system Hotchkiss (5-barrel, with the barrels weighing 450 kilogrammes against 223 kilogrammes for the 1-barrel 57-millimètre Nordenfeldt Caponnière gun):

1. The mechanism consists only of ten parts, and is beyond comparison more simple and secure than the above-mentioned revolver gun.

2. The number of bullets thrown out at the same time is 2½ times larger than that of the Hotchkiss revolver gun.

The numbers of the bullets are per minute as follows:—

Nordenfeldt 57-millimètre gun fires 32 shots, and covers the ditch with about 4,300 bullets. The Hotchkiss 5-barrel 40-millimètre gun fires 50 to 65 case shots with 24 small shots; thus, in total at the best, 1,560 bullets per minute.

3. The Nordenfeldt gun fires in case of need 2·72-kilogramme heavy shells, whereas the Hotchkiss gun has only the case shot, and only one 680-gramms bombshell.

4. The Nordenfeldt Caponnière gun requires a much smaller embrasure than the Hotchkiss revolver gun, and it is thus less exposed to the enemy's fire.

It seems unnecessary to discuss here the advantage of using mitrailleuses and quick-firing guns in the Navy, and it will be sufficient to mention that the English Navy has 1,500 4-barrel 25 millimètre Nordenfeldt mitrailleuses, to which was added recently a large number of 57-millimètre quick-firing guns of Nordenfeldt's system, for armament as light Navy guns. Roos makes the remark in his book that several

*At the trials at Portsmouth, April 1885, the guns were fired for twenty minutes without the barrel getting hot.