in an enemy's country. A certain number of rations in the haversack of each soldier increased the number of days, while herds of cattle, at the season of year when they could find pasturage afforded a supplementary resource.

In October, 1862, McClellan being desirous to move his quarters from the head of one line of railway to another, with an Army of 122,000 men—an operation which might oblige him to subsist for ten days without any other supplies than those he carried with him,—these supplies were transported by a train of 1,830 wagons These wagons were drawn by 10 980 animals; there were besides 5 046 cavalry horses, and 6,836 belonging to the artillery; in order to carry ten day's complete rations of forage for these animals, it required a second train, with an addition of 17,832 beasts, which had to supply the 40,664 horses or mules which in some capacity or other thus followed the Army, with half rations, the country through which that Army passed having to furnish the rest. This enormous figure only comprised the transportation of provisions, exclusive of ammunition and of the sick and wounded In May, 1864, this same Army was of nearly the same strength, numbering 125,000 men, 29,945 cavalry horses, and 4,046 belonging to officers, 4,300 wagons, and 8 5 ambulances—56,199 animals in all—when it took the field under the command of Grant, prepared to fight and march for three weeks, if necessary, before rejoining any of its depots. The rations had been greatly diminished, and the soldiers were accustomed to carry heavy loads; they had three full rations in their knapsacks and three days' allowance of biscuits in their haversacks; each wagon having capacity for 1,400 small rations, the train could furnish ten days' provisions and forage, while the droves of beef cattle that accompanied the Army provided for three more. So that, while McClellan had only provisions for ten days at the utmost, two years later, Grant, with the same Army and the same resources, was able to take with him sixteen days' supply. These figures fully show that experience in the war had succeeded in rendering certain operations possible which, in the beginning, were not so with the improvised troops whose first campaigns we are about to narrate.

General Sherman in his chapter on the Military Lessons of the War (first published in the *Army and Navy Journal* of September 16, 1874, and afterwards in the General's Memoirs, published by Messrs. Appleton and Co.), says on this subject: "To be strong, healty and capable of the largest measure of physical effort the soldier needs about three pounds gross of food per day, and the horse or mule about twenty pounds An ordinary army wagon drawn by six mules may be counted on to carry three thousand pounds net, equal to the food of a full regiment for one day, but by driving along beef cattle a commissary may safely count the contents of one wagon as sufficient food for a regiment of a thousand men, and as a corps should have food on hand for twenty days ready for detachment, it should have three hundred such wagons, as a provision train, and for forage, ammunition, clothing and other necessary stores, it was found necessary to have three hundred more wagons, or six hundred wagons in all for a corps d'armée. Each regiment ought usually to have at least one wagon for convenience to distribute stores, and each company two pack mules, so that the regiment may always be certain of a meal on reaching camp without waiting for the larger trains. I do not believe a soldier should be loaded down too much, but including his clothing, arms and equipment, he can carry about fifty pounds without impairing his health or activity. A simple calculation will show that by such a distribution a corps will thus carry the equivalent of five hundred wagon loads—an immense relief to the trains."

A curious calculation of a similar nature exists, made by Tempelhof, a Prussian general, the historian of Frederick's Wars (quoted in Col. Hamley's operations of war, p. 33.) which is of interest here. "A hundred thousand men," he says, "consumes daily 150 000 pounds of flour, equal to 200, 000 pounds of bread. Bread and forage are seldom to be had in sufficient quantities on the spot—hence magazines are established along the line of operations. The—the bread wagons carried a supply for six days—the men for three more. In commissariat wagons flour for 9 additional days could be conveyed—1 wagon to 100 men for 9 days; thus 1,000 wagons supplied the army for that time An operation of 18 days' duration could thus be conducted without an intervening magazine, but field ovens were required to make the flour into bread, But bread for 3 days requires 2 days to bake it: at the end of 6 days, therefore, a halt must be made to bake or else the ovens would fall behind hand with the supply; so that advancing into an enemy's country before magazines could be formed there, 6 days was the extent of march practicable without a halt. But when the ovens were at a greater distance from the magazines than the commissariat wagons could perform, going and returning in 9 days, the army fell short."

Of the part played by our Regular Army, during the war of the Rebellion, the Count says; "It was especially the regular infantry which, in consequence of its reduced strength, had too play an insignificant part among the divisions of the volunteer infantry. Yet in the army of Kentucky, where it was only represented by a single battalion belonging to the Eighteenth Regiment, that detachment distinguished itself in the first battle fought by that army at Mill Springs. In the army of the Potomac it was represented by eight battalions. or a little over five thousand men; these were not enough for a reserve destined to strike a decisive blow, but this corps, under able command, served as a model to the others and constantly encouraged them by its example, suffering themselves to be cut to pieces rather than fall back on the battle fields of Virginia. The regular cavalry had a more important part to play at the beginning than the infantry, for it was proportionally more numerous, and the inexperience of the mounted volunteers compelled it to perform during a certain period of time all the duties pertaining to that arm. In the army of the Potomac, the artillery was organized by the brave Colonel Hunt, under the supervision of General Barry. The little regular army which we have followed since its formation, after having preserved its military traditions and supported, in the hour of danger, the tottering edifice of the Federal Constitution, was absorbed into the improvised armies. But if it ceased to have a separate existence, its spirit still survived and continued to control the action of the new comers, the influence and the importance of the regular officers will increase in proportion as the volunteers acquire more military experience; and when at the end of the struggle the regular army shall once emerge to view, we shall find 550 of its officers detached amongst the volunteers, 115 of whom were generals and sixty commanders of regiments. Let us add, however, that this regular army, such as we shall then see it reappear, will no longer be the same we have known before the war, constituting a kind of insolated corporation, and the jealous guardian of its traditions; it will, in fact, have opened its doors to all merit displayed on the field of battle; and numbering in its ranks all those who after achieving distinction have desired to continue in the military career, it will have the rare good fortune to combine the best qualities of the volunteers with the noble attributes of the old regulars

There are constant occasion, the author shows, "to regret the absence of a general staff, such as is to be found in European armies, serving as a direct medium between the chief and all the subordinate agents placed under his command, and enabling him to enforce the execution of his wishes at all times" "An exception should be made," he thanks, "in favor of the medical branch of the Service; for, if officers were scarce, physicians before the war were numerous, America being the country which, in proportion to her population, possesses the greatest number of them. The spirit of personal independence and the absence of all control on the part of the State, as far from being determined to the cause of medical science in the New World, has given it an extraordinary impulse; and the Americans quote with just pride, besides such names as those of Jackson and Mott, the reports of their principal surgeons relative to the innumerable experiments which the war enabled them to make. The progress of medical science resulting from these reports may perhaps afford some compensation to humanity for all the blood shed during that cruel war. It may be said that there was no branch of the service in the whole Army, unless it be that of the chaplains, which understood and performed its duties so well as the regimental surgeons—all physicians by profession."

OUR NAVY IN THE WAR.

We are gratified that the Comte de Paris formed so favorable an opinion of our volunteer chaplains, though we feel more sure of the justice of his commendation of our volunteer surgeons, whose record is one in which their profession may well take pride. To our Navy the author records high praise, and some of the most interesting chapters in his book are devoted to the description of naval operations and battles, of which his description of the fight of the *Monitor* and *Merrimac* is one of the most graphic and exciting. He falls into error, however, when he says of the *Monitor*: "The honor of this invention is shared between Captain Cowper Coles, a man of fertile resources and daring enterprise, who was doomed to perish in so unfortunate a manner with the vessel he had looked upon as his master piece, and the Swede Ericsson, who had long been a naturalized citizen of the United States, where he had already become celebrated for his construction of the *Princeton*, the first war ship provided with a screw propeller, and by important improvements in steam machinery. This invention, now familiar to everybody, is that of vessels with revolving turrets, which Ericsson had submitted to French government as early as 1854, during the siege of Sebastopol." In what way Captain Coles shares with Captain Ericesson the honor of this *invention* it is difficult to see Captain Coles states, in a letter to the London *Times* of April 5th, 1862, that his experience in the Baltic and Black Seas, in 1855, suggested to him the idea of building impregnable vessels, and that towards the latter part of that year he had "a rough model made by the carpenter of the *Stromboli*," and that he proposed to protect the guns by a stationary shield or cupola; Cap-