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"THE OPERATIONS OF WAR EX-
PLAINED AND ILLUSTRATED."
A single volume of 450 pages and 17 maps, carefully selected, has appeared under the ${ }^{2} \mathrm{R}_{0}$ ove title, from the pen of Colonel Hamley. Royal Artillery.
It is written in a style that enables the ${ }^{n} 0$-professional reader to understand the Principles illustrated, and is the first publi cation that embodies, with the general principles, the application of all the modern agents, steam locomotion, electricily, and ${ }^{\text {breech}}$-loading firearms, and the notice of grand tactics, coming down to the late russian-Austrian campaign.
The plan of the work is in six general parts. The first-describes the conditions of modern war; the second-the considera-
tions governing a campaign; the third-the Telations of opposing armies with reference to their communications; the fourth-the rilations without reference to communicathe ; the fifth-the uses of obstacles; and With a chapthethe various systems of tactics, Tar. ${ }^{\text {a }}$ chapter on the minor operations of
The whole of the work evidences great prid to the preparation, and the attention prid to the explanations of the conditions to er which armies operate, renders it easy
throllow the description of the narrative throughout.
The opening chapter illustrates the neces
chapters secure starting point; the two
kecresity which follow we reproduce:-
drersity of good roads for army opera-
Thons.
the base being formed, it is indispensable to
A mustained and dubious enterprise that good
Toid should and dubious enterprise that good
lo mou army as it moves away from its base.
$4{ }^{4} 80$ ruainous districts, where the roads
Wheel rugged and steep ait to be unfit for
must be carrices, the necessary supplies
But the carried on pack-horses or mules.
4o muantity which an animal can draw
4ty, that greater than that which it can
Feleat of the numbers of animals and the heonsely of road they occupy must be im. alt, almoreased. It is therefore very difalmost impossible, to supply a very
long camprign; and roads practicable for carrages are in lispensable to all operations. except those which aim at attaining their resuits in a brief and definite time. And not ouly must the roads be good in the orti nary sense, but they must be great main arteries of the region. solidly constructed. Anybody who lives in the neighborhond of a newly-established brickfield, will see how quickly the parish roads are broken and wrought into hollows by the passage of the heavy brick carts. The trains that follow an army, laden as they are with ammunition. pontoons. platforms for guns, siege artillery, and other ponderous materials, soon destroy all but the best roads. In order, then, that the enormous stream of supply may be uninterrupted, it is necessary that the roads should be of the best construction, like our own highways and the great paved chaussees of the continent. The proof of this is lound in the difficulties under which armies begin to labor directly they are thrown on bad roads for their supplies. Our own experience in the Crimea shows that even seven miles of soft soil interposed in winter between an army and its depots. my be almost a fatal otistacle; and General MeClellan, in his report of his campaign in the Yorktown Peninsula, tells us-""()n the loth and 16 th the divisions of Franklin, Smith. and Porter, were with great difficulty moved to White House, five miles in advance; so bad was the road that the train of one of these divisions required thirty-six hours to pass over this short distance." And again. speaking of the mivement from the York river to Willi:msburg, he says, "The supply trains had leen forced out of the rouls on the 4 th and 5 th to allow the troops and aril. lery to pass to the front. and tha roads were now in such a state, after thirty six hours continuous rain. that it was almost impos sible to pass empty waggons over them."
But it is not only on account of the sup. phes that great armies operate by gieat roads. It is slso because the march of the troops and artillery becomes on bad 20 dds so slow and uncertain that all the calcula tions on which a general bases a combined operation are liable to be falsitied, and the rapidity necessary for a movement intended to surprise or foil an adversary is lost, so that the design is forezeen and frustrated by the enemy. An example of the different rates at which troops move over a good and a bad road is afforded by the campaign of Waterloo. Napoleon following Wellington, and Grouchy following Blucher, bothquitted the field of Ligny on the afternnon of the 17th June. The Emperor, marching by the great paved chaussees of Namur and of
the position of Waterloo, seventeen miles from Ligny. Grouchy, moving by country rouls. had great difficulty in bringing his 30 (1)0 mar to Gemtloux. five miles from Ligny, by $100^{\circ}$ chrck the same night. And, to quote more moderu instances, General McClellan ays, "Un the 14th of March. a rectnnoissance of a large bolly of cavalry. with some infantry. under command of Gen eral Stuneman, was sent along the Urange and Alexandria railroad to determine the position of the ¢nemy, and, if possible. force his rear across the lappahnnock; but the roads were in such condition that, finding it impossible to subsist his men, General Stonem in was forced to return." And on another occasion. when the Confederates suddenly fell back from near the Potomac, just as he was commencing to advance upon them, he speaks of their retreat as "uniortunate, in that the almost impassable roads between our position and theirs deprived us of the opportunity for inflicting d:mage, usually afforded by the withdrawal of a large army in the face of a powerful adversary."
While. however, impressing on the reade: the absolute necessity of good roads for the sustained operations of a campaign, it is not asserted thit considerable bodies of troops never move by indifferent ro dis. Many in stincts of the contrary would appear in a short course of military reading thus, Napoleon carried 40,000 men from Switzerland to Italy, over tho st. Bernard; but this was for the sake of obtaining hy surprise an advantage of position over the Aus trians, and, that position attaned, he had the gre t rouls of Italy for his future movements, and the territory belween the Alps anll 10 , firiml $y$ to him and hastile to the Austrins was aviahatie for s:ipplies. Ag in. Welling ton, ollowing the freach in 1813 on the great row of Vall dohd and Burgos, quitted it to throw his army across diffisult mount in puhs; but he did so for the purpose of shifting his bise from Portugtl to the nor thern ports of Spain, with which he presenuly opened new communicitions And Mc Clellan, crossing the Potomac after LoA. subsequent to the batule of Antiet 1 m . moved by the road from llarper's Ferry along the foot of the Blue Rilge which is prolriby hilly and broken; butas soon as he re whed th $\rightarrow$ Manassas railway he came into direct communic-tion by that railway with Wash ington. Thus each of these movements was of brief duration, and made witia the definite ohject of immediately attaining a new and more convenient communication with the depots of supply.
Whatever alvantages good roads can confer must be immensely increased when railways are empioyed. In using them, the

