

Those who have gathered from their school-histories the idea that gunpowder drove armor out of use are greatly mistaken, we are told by Mr. French Strother, who writes in *The World's Work* (New York, November) on "Weapons of this War." It was the long marches and counter-marches that made heavy armor unweearable; and now that these have gone out of fashion and the combatants sit comfortably in trench rocking-chairs and do knitting and other things while awaiting attack, armor is actually coming again into vogue. Naturally, the "cut" of some of the steel garments has changed a little since the days of the Norman conquest, but their essential purpose has not greatly altered. To quote Mr. Strother:

"Few people realize the extent to which the armor of romantic history has returned to the stern reality of war. Doubtless our grandfathers, reading 'Ivanhoe' or Froissart's 'Chronicles,' got from the descriptions of the bearmored knights of the tourney and the battle-field only the pleasant odor of an age gallant but forever gone. The words tinkled pleasantly in the ear: hauberk, helm, and greaves, buckler, sword, and spear; but they were the words of an art lost with the advance of 'unromantic' gunpowder. What no one stooped to perceive, save only some antiquarians and some especially discerning military experts, was that 'the improvement in firearms did not drive out armor, but a change in strategy that called for long marches and the rapid movements of armies.' In other words, it became of less moment that a man should be proof against bullets (as armor still made him) than that he should be swifter in living up to Napoleon's maxim that the general who had the most troops at the crucial place at the crucial moment won the battle.

"But in this war—on the Western front, at least—troops are no longer mobile; they are literally sitting in chairs in trenches—most of the time waiting for something to turn up. High-

explosive shells and shrapnel are their most dangerous foes when they stay below their ramparts; rifle-bullets when they peer above them. Against 'H.-E.' shells there is no real protection. But shrapnel-bullets are discharged from their shells at a relatively low velocity; good armor has proved to be proof against them. The protection against rifle-bullets is a different mat-

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ter. Here the velocity is terrific. Strangely enough, however, the course of a modern rifle-bullet is most unstable. The bullet is so delicately balanced, and so carefully formed to slip most easily through the resisting air, that the slightest force against it sideways deflects it hopelessly from its path. Head on, it will go through the bodies of six men. But let it strike a twig ever so little to one side of its case, or strike its mark & glance instead of a direct blow, and it flies off easily. Here rounded or pointed armor has proved its great value. French soldiers are being equipped with steel skull-caps that are almost indistinguishable from the helmetless helmets of English armor after the Norman conquest. Enough experience has been gained from their use to demonstrate their value in turning rifle-bullets and shrapnel; and French field surgeons are urging that their use be widely extended. Similar experience with fine cuirasses has shown similar results; but great danger lies in the use of chain mail and coats of mail made of steel pieces sewn on canvas or leather, because the value of armor under modern conditions is in its property of causing bullets to glance off, not in its direct resistance; and where bits of the mail are driven inward they greatly complicate the surgeon's task.



FASHIONS IN HELMETS - "COME BACK" IN THE FRENCH ARMY.

"The weight of armor is not an objection. A very serviceable half-armor weighs about 30 pounds, to which may be added another 15 pounds for clothing and arms, making together 45 pounds. Against this may be placed the (British) service equipment of 1911, totaling 59 pounds 11 ounces. In the case of the cavalry the comparison is still more striking, for the war-horse of the late fifteenth century carried about 350 pounds (horse armor, rider, rider's armor, arms, and saddle), while the German cuirassier horse of 1909 carried 334 pounds."



THE ARMORED SHIELD IN MODERN USE BY THE GERMANS.

"Perhaps of even more value than its use for defense, armor is valuable in those vital operations of digging in and of the brief charges across the open space between the trenches. Imperfect as its protection is, it is still protection, and its moral value is, therefore, great. Already steel shields are used in the trenches to protect the heads of the men as they dig. The need of something of the sort under fire is suggested by the device of the infantryman, who carry a bag of sand on their backs as they crawl out into the open to begin new trenches; the bags are a complete protection against shrapnel. Armor, then, in various forms, is already a potent element in this war, and likely to increase in importance."