

leave of absence in Europe, he made a study of the use of aluminum in the manufacture of military equipment. In 1896 he was chief of the militia section of the adjutant-general's department, and the following year made a practical test of the emergency ration, his men marching twenty-one miles per day and on one pound of food daily. In the Spanish-American war he participated as troop commander of the Santiago campaign and in the battle of San Juan. As major, U. S. volunteers, 45th and 42nd infantry regiments, he served in the Philippines during 1899 1901, took part in the suppression of the Philippine insurrection, and was acting inspector general of the 4th district of northern Luzon, participating in two engagements. In 1904 he had charge of the experimental rifle range established near Ft. Clark, Tex., to test a new U. S. magazine rifle. Besides securing ballistic data, Brown recommended several minor improvements in the rear sight which were adopted. Nearly two years were spent in Australia and New Zealand investigating the horse market and as disbursing and purchasing quartermaster, purchased and shipped to Manila some 600 cavalry remounts. Following this he inspected and reported on remount establishments in Java and India. After graduating at the army war college in 1910, he made a tour of inspection of five South American republics. In 1911 he experimented with the Barr and Stroud range finder; took the field officer's course at the mounted service school in 1912 and served two years as acting inspector of the Eastern department. In 1914 he commanded the 10th cavalry at Ft. Huachuca, Ariz., and enforced neutrality laws during the siege of Naco, Sonora, Mexico. In the Mexican punitive expedition of 1916 he commanded an independent cavalry column which penetrated 350 miles into Mexico, to Santa Cruz de Villegas, participating in an engagement at Aguas Calientes. When the United States entered the World war, he was attached to the staff of the 42nd division A. E. F., and went with it to France. In November 1917 he was assigned to the then newly created post of inspector of the quartermaster corps, and in the performance of his duties motored