GRANT'S WOODEN MORTARS AND SOME INCIDENTS OF THE SIEGE OF VICKSBURG

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FOLLOWING the battle of Big Black River Bridge, May 17, 1863, General Pemberton withdrew his Confederate forces to the Vicksburg defenses. Grant's Army of the Tennessee pursued and, with the cooperation of the Mississippi Squadron under Rear Admiral David D. Porter, laid siege to this strategically important stronghold on the Mississippi River. The investment operations that followed were marked by a number of incidents interesting as well as unique in the history of the Civil War.

Grant had not expected a prolonged siege of the city and had ordered an assault to carry the Confederate lines on May 19 which resulted only in securing more advanced and advantageous positions for the foremost of his units. A second direct infantry attack three days later, preceded by a furious bombardment from every Federal battery then in position, again resulted in failure. Grant then decided that the city could be taken only by formal investment and, in his own words, he determined to "outcamp the enemy." The Army of the Tennessee had with it no siege train. The operations during the recent campaign would have precluded the carrying of such matériel in the equipment of the army even had it been available, and when formal investment operations were begun Grant's heaviest ordnance consisted of six 32-pounder rifles and the field batteries attached to the various units of his army.[1] To correct this defect he requested Admiral Porter to furnish several heavy caliber naval guns for mounting in batteries in rear of the city.[2] Porter accordingly supplied four 8-inch and two 9-inch pieces which were placed in position in Grant's lines.[3] Altogether including light and heavy field pieces and naval ordnance, the Union land forces had 168 guns in position by June 20, and the Chief of Artillery reported ten days later that the number had been increased to 220.[4] These numerous guns, superior in numbers, range, and caliber to the ordnance of the defending force, soon gained for the Union army a definite fire superiority that succeeded in severely crippling and silencing many of the

[1] Genl. U. S. Grant, "The Vicksburg Campaign," *Battles and Leaders of the Civil War* (New York, 1884), III, 517, 521; *Id., Personal Memoirs of U. S. Grant* (New York, 1885), I, 531-32.

[2] Grant to Porter, May 29, 1863, *Official Records of the Union and Confederate Navies in the War of the Rebellion* (Washington, 1894-1927), ser. I, vol. XXV, pp. 49-50. This publication is hereafter cited as *O. R. N.*, and all references to it are to the same volume.

[3] Porter to Grant, May 29, 1863, *O. R. N.*, p. 50; Porter to Secy. Welles, June 9, 1863, *O. R. N.*, p. 66.

[4] Asst. Secy. of War Charles A. Dana to Secy. Stanton, June 20, 1863, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (Washington, 1881-1901), ser. I, vol. XXIV, pt. I, p. 104. This publication is hereafter cited as *O. R.*, and all references to it are to the same volume. Reports of Capts. F. E. Prime and C. B. Comstock (Chief Engineers, Army of the Tennessee), November 29, 1863, *O. R.*, pt. II, p. 176.

Confederate batteries and served materially to weaken resistance to the Federal siege operations.[5] But in all this formidable and effective array of metal not a single mortar was available for use against the Confederate defenses.[6]

The nature of the investment operations, however, rendered the use of mortars highly desirable and, in some instances in the last stages of the siege, almost a necessity. "Investment by inches" was the term once applied to the slow and steady process of pressing approaches to the beleaguered city.[7] The Confederate defensive works generally occupied high ground, thus giving some advantage to the defenders against the pioneer troops who pushed their saps and parallels almost within touching distance of the ditches and parapets of the fortifications that ringed the land side of the city.[8] The proximity of the opposing forces became almost unbelievable as the siege progressed. Grant states at the outset that "in no place were our lines more than 600 yards from the enemy."[9] On May 28 the sappers of Sherman's 15th Corp had completed parallels within eighty yards of the Confederate fortifications, and by June 9 the forward saps had been pushed within fifty feet of the same position. General McPherson's units had also reached a point within one hundred yards of their objective.[10] June 20 witnessed the pioneers of General Logan's Division within twelve feet of the works opposite his line, and Grant's chief engineer reported that by July 1 four Federal approaches had actually reached the Confederate ditches.[11] About the same time Brigadier General E. A. Carr's approach was only ten yards from the opposing works.[12] By the end of June, at no less than ten points along the lines, the heads of regiments formed for assault could be placed within five to 120 yards of the enemy's line.[13] So close did the burrowing Union pioneers dig to the works opposing them that on one occasion a gun was double-shotted and run forward by hand until its muzzle entered a Confederate embrasure. In this position it was fired, disabling a loaded cannon and wiping out its crew.[14]

From a glance at this general situation, in which the opposing forces were so closely entrenched, it is obvious that in certain parts of the lines supporting

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[5] Maj. Genl. C. L. Stevenson to Maj. R. W. Memminger, July 29, 1863, *O. R.*, pt. II, p. 344; Maj. Genl. John H. Forney to Memminger, July 21, 1863, *O. R.*, pt. II, p. 368; Maj. Genl. M. L. Smith to Memminger, August 9, 1863, *O. R.*, pt. II, p. 398.

[6] Grant, *Personal Memoirs*, I, 540.

[7] *Cf.* photograph of Genl. John A. Logan's position (3rd Division, 17th Corps) in Francis Trevelyan Miller, ed., *Photographic History of the Civil War* (New York, 1911), II, 201.

[8] "Description of the Ground," and "Description of the Enemy's Line," reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. 11, pp. 169-70.

[9] Grant, "The Vicksburg Campaign," *Battles and Leaders*, III, 521.

[10] Dana to Stanton, May 28 and June 10, 1863, *O. R.*, pt. I, pp. 90, 95.

[11] Dana to Stanton, June 20, 1863, *O. R.*, pt. I, p. 104, Capt. John M. Wilson to Brig. Genl. John A. Rawlins, September 7, 1863, *O. R.*, pt. II, p. 179.

[12] "Carr's Approach," reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. II, p. 174.

[13] Wilson to Rawlins, September 7, 1863, *O. R.*, pt. II, p. 179.

[14] Report of Maj. Genl. John A. McClernand, June 17, 1863, *O. R.*, pt. I, p. 155.

artillery behind the besiegers had to observe a minimum range limit that would reduce the effectiveness of their fire on the forward Confederate entrenchments. Otherwise ordinary range dispersion would produce casualties among the supported troops and also seriously damage the trenches and approaches constructed before the enemy's works. This danger was recognized by General Grant, who distributed to the various corps and divisions maps showing the positions of the advanced units. These maps were issued to the artillery in support as "a guide . . . in firing, to avoid throwing shot and shell in such direction as may endanger our own troops."[15] Hence the most effective fire of which the numerous Federal batteries were capable could not be delivered against some of the foremost of the Confederate works, principally the 3rd Louisiana redan, from which, however, a destructive shower of musketry, grenades, and other hand missiles was maintained on the toiling engineer troops and infantrymen engaged in digging saps and parallels. The advantage of elevated ground occupied by the defenders in some of these positions also told heavily on the Union pioneers as the approaches were pushed forward. The relatively higher positions, as the distance between the forces shrank to a few yards, enabled the Confederates to hurl 6- and 12-pounder artillery shells with lighted fuses, as hand grenades, into the Federal saps and rifle pits.[16] From several positions these missiles were freely used during the siege and, as General Leggett reported, "made sad havoc amongst my men."[17] So effective was this method of attack that the Confederate Brigadier General Francis A. Shoup organized his artillerists into a "hand grenade and thunder barrel corps."[18] The latter designation applied to the Confederate practice of filling barrels with cannon powder and rolling them with short fuses over the parapets into the Federal saps and trenches. Some of these improvised projectiles were packed with artillery shells interspersed with powder, nails, and scraps of iron.[19] On one occasion a large thunder barrel containing 125 pounds of powder and equipped with a 15-second fuse was tossed over the outer parapet of the 3rd Louisiana redan and exploded with severe effect. "Fragments of sap-rollers, gabions, and pieces of timber were thrown into the air," wrote Major Samuel H. Lockett who had supervised the operation and personally lighted the fuse, "and I think some of the

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[15] Lt. Col. W. B. Scates (A. A. G., 13th Corps) to brigade commanders (circular letter), June 13, 1863, MS., Letters received, 2nd Brigade, 10th Division, 13th Corps (National Archives).

[16] "Ewing's Approach," reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. II, p. 172; report of Maj. John F. Walden, June 26, 1863, *O. R.*, pt. II, p. 313; Col. T. N. Waul to Maj. R. W. Memminger, July 30, 1863, *O. R.*, pt. II, p. 358; report of Col. Francis M. Cockrell, August 1, 1863, *O. R.*, pt. II, pp. 415-16; journal of Capt. Andrew Hickenlooper, June 26, 1863, *O. R.*, pt. II, p. 202; Dana to Stanton, June 26 and 28, 1863, *O. R.*, pt. I, pp. 109, 111.

[17] Report of Brig. Genl. Mortimer D. Leggett, July 6, 1863, *O. R.*, pt. II, p. 294.

[18] Journal of operations, 3rd Brigade, Smith's Division, June 14, 1863, *O. R.*, pt. II, p. 408.

[19] W. H. Tunnard, "Reminiscences of the 3rd Louisiana Infantry in the Trenches in Front of Logan's Division," in Osborn H. Oldroyd, *The Siege of Vicksburg from the Diary of Osborn H. Oldroyd* (Springfield, Ohio, 1885), p. 134.

sappers must have been burned and smothered."[20] The survivors of the explosion retreated from the sap.[21]

The Federal pioneers were generally able to protect themselves reasonably well from musketry by the use of gabions and sap rollers, a number of which were built of packed cotton. But the closeness of the positions made possible the occasional destruction of these protective devices by fireballs thrown and fired from the Confederate lines. Musket balls, wrapped in cotton soaked in turpentine, were frequently fired into the sap-rollers and gabions, setting them afire in a dozen places at once.[22]

Against these offensive operations at close range the Federal pioneers in a number of instances had little opportunity to retaliate. Their own artillery could not be fired on the outer Confederate lines for reasons above explained. In addition, a number of their positions in the forward parallels were below those of their opponents because of the elevated ground occupied by the defensive works. Consequently, the compliment of hand grenades and thunder barrels could not be reciprocated as the uphill throwing was more than even the strongest man could accomplish effectively. Even in attempting such tactics the Union troops would be dangerously exposed to musketry fire from the works only a few yards away. Some naval hand grenades had been obtained from Porter's squadron, but these were of an unusual shape and badly adapted for use in such positions. Because of their "peculiar form [they] could not be thrown at any considerable distance," wrote the Chief Engineer of the 13th Corps. "Even when the approaches were only ten feet from the ditch, it required an extraordinary man to throw one into the works."[23]

Obviously the best solution of these several problems was the use of mortars. The accuracy of fire, short ranges, high trajectories, and effectiveness against defiladed positions which are characteristic of these weapons adapted them admirably to the situation confronting several positions held by advanced elements of the investing army. The Confederates in Vicksburg possessed a single 10-inch mortar which was used with effect from various parts of their inner lines.[24] On the river side Porter's mortar boats delivered a severe and destructive fire on the city, destroying houses, harassing the shore batteries, and even dropping shells

[20] Report of Maj. Samuel H. Lockett, July 26, 1863, *O. R.*, pt. II, pp. 333-34.

[21] Lockett, "The Defense of Vicksburg," *Battles and Leaders*, III, 491.

[22] Report of Lockett, July 26, 1863, *O. R.*, pt. II, p. 332; Maj. Genl. John H. Forney to Memminger, July 2, 1863, *O. R.*, pt. II, p. 364; journal of Lt. P. C. Hains, July 1, 1863, *O. R.*, pt. II, p. 186; journal of Capt. Andrew Hickenlooper, June 18, 1863, *O. R.*, pt. II, p. 200; Lockett, "The Defense of Vicksburg," *Battles and Leaders*, III, 491.

[23] Report of Lt. P. C. Hains, July 30, 1863, *O. R.*, pt. II, p. 181.

[24] Reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. II, p. 175; report of Lockett, July 26, 1863, *O. R.*, pt. II, pp. 332-33; Pemberton to Col. Josiah Gorgas, April 23, 1863, *O. R.*, pt. I, p. 317; Dana to Stanton, June 15 and 18, 1863, *O. R.*, pt. I, pp. 99, 102; Maj. Genl. Francis J. Herron to Grant, July 1, 1863, *O. R.*, pt. II, p. 318; report of Col. Edward Higgins (C. S. Artillery, Commanding Shore Batteries), July 25, 1863, *O. R.*, pt. II, pp. 338-40 *et passim*.

with accuracy into the Confederate positions beyond the town toward Grant's lines. Especially annoying was this fire when directed with precision on the cattle pens containing the scant stock of beeves for the sustenance of the defending army.[25] But the Federal land forces did not have one such piece of effective ordnance at their disposal.

Grant and his staff soon recognized the need of this type of weapon in the forward investing lines on the land side of the city. "Coehorn mortars were particularly needed," reported the Chief Engineer of the 13th Corps,[26] and Major General Francis J. Herron complained that the lone 10-inch mortar of the enemy was "annoying us terribly."[27] On June 20 Grant sent an urgent request to the Chief of Ordnance in Washington for twenty mortars, half of which were to be Coehorns and the remainder 8- and 10-inch siege weapons. "Have them come through by special messenger as quickly as possible," he urged the Ordnance Bureau.[28] It appears that the request was repeated,[29] but, either from lack of matériel, shortage of transportation, or inefficiency, the pieces were not forthcoming. It was not until a month after Vicksburg fell that the large siege mortars finally arrived, and even then the Coehorns had not been received.[30] It is evident that previous attempts to secure these weapons had been futile for Lieutenant Peter C. Hains, Chief Engineer of McClernand's Corps, wrote in his journal of the siege on June 8 that "no mortars can be obtained, and the want of them is severely felt."[31] Several weeks later the same officer noted, "In General Smith's front the saps are now about as close as they can get without first clearing the rebel works in front by means of mortar shells. Cohorn mortars would be invaluable at the present time."[32]

Then the ingenuity of several engineer officers came into play, exemplifying the time-worn adage that necessity is the mother of invention. In the absence of regulation ordnance for the purpose, and after all reasonable attempts to secure such matériel had failed, a number of mortars were constructed of wood, an expedient that at first glance must seem highly impracticable. The largest and toughest logs procurable were cut into suitable lengths and then reinforced by shrinking on stout iron bands at the ends and middle. The logs were then bored out to receive 6- and 12-pounder shells and were mounted in the forward parallels

[25] Lt. Comdr. James A. Greer to Adml. Porter, May 31, 1863, *O. R. N.*, p. 53; Porter to Grant, June 3, 1863, *O. R. N.*, p. 59; Greer to Porter, June 8, 1863, *O. R. N.*, p. 65; Porter to Secy. Welles, June 9, 1863, *O. R. N.*, p. 66; Greer to Porter, June 11, 1863, *O. R. N.*, p. 68; Porter to Welles, July 4, 1863, *O. R. N.*, p. 104; report of Pemberton, August 25, 1863, *O. R.*, pt. I, p. 276.

[26] Report of Hains, July 30, 1863, O. R., pt. II, p. 181.

[27] Herron to Comdr. S. E. Woodworth, June 29, 1863, *O. R. N.*, p. 98.

[28] Maj. S. C. Lyford (Chief of Ordnance, Army of the Tennessee) to Brig. Genl. John W. Ripley (Chief of Bureau of Ordnance, U. S. A.), June 20, 1863, *O. R.*, pt. III, p. 422.

[29] Dana to Stanton, June 21, 1863, *O. R.*, pt. I, p. 105.

[30] Col. T. S. Mather to Maj. Genl. E. O. C. Ord, August 5, 1863, MS., Letter Books, 13th Army Corps, VI, 156 (National Archives).

[31] Journal of Hains, June 8, 1863, *O. R.*, pt. II, p. 182.

[32] Journal of Hains, June 29 and 30, 1863, *O. R.*, pt. II, p. 185.

of the Union lines.[33] The nature of the mountings is not disclosed in the available documents, though one report states that the improvised Coehorns were simply stuck into the ground. In most cases seasoned gum wood was found to be the most suitable material for construction.[34]

The individual initially responsible for the idea is not clearly identified. It appears that Stewart R. Tresilian, a volunteer civilian engineer attached to Logan's Division, 17th Corps, played a prominent part in inaugurating the scheme,[35] and his example was followed by other officers in charge of engineer operations. Colonel Manning F. Force of the 20th Ohio, who also commanded a brigade in the 17th Corps, later declared that the novel weapons were devised by Private John W. Friend of Company C of his regiment.[36] Lieutenant Hains, however, claims to have taken the initiative and reports that the wooden mortars were constructed at his orders.[37]

Hains had witnessed the havoc wrought in General Smith's lines by the Confederate hand grenades and sought to retaliate by constructing several springboards, not unlike ancient catapults in principle, for throwing grenades and shells over the parapets of the Confederate work designated as Fort B. He then learned that wooden mortars were being effectively used in General McPherson's (17th Corps) positions and directed Captain William F. Patterson of Smith's pioneer corps to build three of these wooden cannon to supplement the primitive devices then in use.[38] In his report he later stated that "Cohorn mortars were needed particularly. No mortars could be obtained, and . . . in the latter part of the siege the want of mortars was so severely felt that I gave orders to have several wooden mortars made . . . ."[39]

Although wood as a medium for cannon building seems entirely unsuited for the purpose, even for weapons of short range, the improvised Coehorns thus constructed proved to be entirely satisfactory. Their effective range was from a hundred to 150 yards, more than enough for the distance separating the lines where they were used. Tresilian reports that three of them were mounted about one hundred yards from the main Confederate redoubt fronting the 17th Corps and that immediately after the explosion of the mine of July 1 he opened fire with his crude weapons which dropped "nearly every shell in the proper place." The fire was sustained at intervals for forty-eight hours "with telling effect." During this period 468 rounds of 6- and 12-pounder projectiles were fired from the three

[33] "Logan's Approach," reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. II, p. 173.

[34] Journal of Hains, July 2, 1863, *O. R.*, pt. II, p. 186.

[35] Reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. II, p. 173.

[36] Brig. Genl. Manning F. Force, "Personal Recollections of the Vicksburg Campaign," in *Sketches of War History* [papers read before the Ohio Commandery, Military Order of the Loyal Legion of the United States], vol. I (Cincinnati, 1888), p. 307.

[37] Report of Hains, July 30, 1863, *O. R.*, pt. II, p. 181.

[38] Journal of Hains, July 2, 1863, *O. R.*, pt. II, p. 186.

[39] Report of Hains, July 30, 1863, *O. R.*, pt. II, p. 181.

mortars into the Confederate position and produced over ninety casualties.[40] Comstock and Prime reported that the wooden tubes "stood firing well, and gave sufficiently good results at 100 or 150 yards distance,"[41] and Hains wrote that the mortars were said to "work admirably for about 100 yards."[42] Captain John M. Wilson, Chief Engineer of the Department of the Tennessee, also stated that they were "very effective."[43] Only small charges of powder were required to propel the light shells the short distance required,[44] and thus stresses and pressure in the wooden tubes were reduced to a minimum.

Retaliation for the hand grenades and thunder barrels, now made possible by the small wooden mortars, appears to have given the Union soldiers much satisfaction. An Illinois chaplain, possibly of the "fighting parson" type, later set down in his regimental history that on July 2 "Our cannonading was especially furious, and we treated them very plentifully with 12-pound shells from a wooden mortar, in return for their hand grenades . . . ."[45] Samuel H. Lockett, Confederate Chief Engineer, reported that one of these Coehorns firing on the 3rd Louisiana redan produced more than a dozen casualties in killed and wounded in the space of an hour.[46] Likewise Major General John H. Forney, one of Pemberton's division commanders, fully verified the Yankee chaplain's statement, and declared that on July 2 the enemy "opened from what is supposed to be a Cohorn mortar, which throws its missiles among the men with great accuracy, killing and wounding many and tending much to dishearten the men."[47] On the same day Brigadier General Louis Hébert, a brigade commander of the same division, recorded that the "enemy's fire was kept up as usual, our troops suffering more than before from his mortar shelling."[48] Similar testimony to the effect of the fire from these wooden weapons is found in a dispatch from Major General John S. Bowen, commanding the Confederate 2nd Division, who wrote to Pemberton's adjutant general on July 2,

> Our position of the Jackson Road is fast becoming more dangerous. The enemy have a cohorn mortar and our exact range. They fire shell with heavy bursting charges, and our men are killed and wounded with fearful rapidity . . . . I urge that every howitzer that can be brought to the vicinity be placed in position and fired at its greatest elevation with quarter charges to render the ground in rear and in vicinity of their sap as untenable as possible. No time is to be lost.[49]

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[40] Report of Tresilian, August 17, 1863, *O. R.*, pt. II, p. 208.

[41] "Logan's Approach," reports of Prime and Comstock, November 29, 1863, *O. R.*, pt. II, p. 173.

[42] Journal of Hains, July 2, 1863, *O. R.*, pt. II, p. 186.

[43] Report of Wilson, September 7, 1863, *O. R.*, pt. II, p. 179.

[44] Force, "Personal Recollections of the Vicksburg Campaign," *Sketches of War History*, I, 307; Brig. Genl. Andrew Hickenlooper, "The Vicksburg Mine," *Battles and Leaders*, III, 540; Report of Hains, July 30, 1863, *O. R.*, pt. II, p. 181.

[45] R. L. Howard, *History of the 124th Regiment, Illinois Infantry Volunteers* (Springfield, 1880), p. 119.

[46] Report of Lockett, July 26, 1863, *O. R.*, pt. II, p. 334.

[47] Forney to Memminger, July 2, 1863, *O. R.*, pt. II, p. 365.

[48] Report of Hébert, July 9, 1863, *O. R.*, pt. II, p. 377.

[49] Bowen to Memminger, July 2, 1863, *O. R.*, pt. II, pp. 413-14.

This was a high compliment indeed for the erstwhile gum log, now banded with iron and stuck into the ground to serve as a cannon. The urgent appeal for "every howitzer that can be brought" to neutralize the fire of the one wooden piece speaks eloquently of its effect. One of Bowen's brigadiers, Colonel F. M. Cockrell, mentions one of the log mortars in his report of the siege, adding that he later discovered that the infernal gun was of wooden construction. "This mortar did us great damage," he wrote, "having the exact range of our position, and throwing shells heavily charged with powder."[50] Among those killed by its fire were Lieutenant Colonel Pembroke S. Senteny, commanding the 2nd Missouri Infantry and reputed to be one of the best field officers of his division, and Lieutenants John C. Crenshaw and John Roseberry of the 6th Missouri.[51] After the surrender one of Hébert's staff officers told Tresilian that twenty-one men had been killed and seventy-two wounded by the fire of three of these mortars in two days.[52] Likewise Lieutenant Colonel R. S. Bevier of the 5th Missouri later recorded that on July 1, immediately after the explosion of the mine,

> From the hostile works immediately upon the outside of our lines a small mortar had opened, throwing 12-pound shell, and every one lighted and exploded in our midst, rarely failing to kill or wound one or probably several of our men . . . . The artillery ceased firing for a while, but the destructive little motar still continued to play upon us with serious effect. About 40 men of the regiment were struck by it, and more of them were killed than wounded.[53]

Similarly another Confederate soldier wrote down in his reminiscences that "an immense number of 12-pound shells, thrown by wooden mortars, by the Yankees, descended among the troops, doing fearful executions."[54] Thus, as judged from the testimony of Confederate officers and men, the experiment in makeshift wooden ordnance was a remarkable success. On the Union side, General Grant makes special mention of the affectiveness of these mortars in his detailed memoirs and also in other accounts of the siege,[55] and Captain Hickenlooper, later a full brigadier, wrote that their fire was "exceedingly effective."[56]

The capitulation of Vicksburg on July 4 terminated the use of these novel weapons, which had been conceived out of necessity and expediency and fabricated from crude substitute materials. Their successful use has a certain significance in the history of the unequal struggle that was still to ravish the divided nation for nearly two more years. Instances of expedients and substitutes for necessities, both civilian and military, were common and tragic occurrences in the economically

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[50] Report of Cockrell, August 1, 1863, *O. R.*, pt. II, p. 416.

[51] *Ibid.*; Bowen to Memminger, July 2, 1863, *O. R.*, pt. II, p. 413.

[52] Report of Tresilian, August 17, 1863, *O. R.*, pt. II, p. 208.

[53] R. S. Bevier, "Incidents and Personal Sketches of the 1st and 2nd Confederate Brigades," Oldroyd, *op. cit.*, p. 173.

[54] W. H. Tunnard, "Reminiscences," Oldroyd, *op. cit.*, p. 139.

[55] Grant, *Personal Memoirs*, I, 540; *Id.*, "The Vicksburg Campaign," *Battles and Leaders*, III, 522.

[56] Hickenlooper, "The Vicksburg Mine," *Battles and Leaders*, III, 540.

stricken Confederacy. Here was one instance, at least, of a similar phenomenon in the armies of the richly supplied North. During the siege of Fort Pulaski, more than a year before, a regiment of Connecticut Yankees had resorted to their familiar pastime of whittling sticks to provide fuse plugs for shells when the ordnance stores failed to arrive in time, and a Georgian of the surrendered garrison sarcastically reminded his captors of the well-born New England story of "wooden nutmegs."[57] After the surrender at Vicksburg a similar jest might have been in order, but the comments of Confederate officers and men in official reports and personal memoirs show that the wooden Coehorns were no joking matter to the resolute garrison that bravely defended its lines for nearly seven weeks.

[57] Maj. Genl. Quincy A. Gillmore, "Siege and Capture of Fort Pulaski," *Battles and Leaders,* II, 7, 9-10.