took their horses and valuables. Private John Ball of the cavalry, while out hunting met a similar fate. In this fight two Indians were killed and several wounded, and they lost several ponies. On the 8th of August, four days after the fight at Tongue river, we came upon the site of a recent Indian village. The Indians had packed up and left a few days before, abandoning considerable property. General Stanly directed General Custer to take his cavalry, numbering 450 men follow the trail and, if possible overtake and punish the Indians. General Custer left on the night of the 8th, and marched all night and most of the next day. At sundown on the 9th, after a march of forty miles, he arrived at a place where Indians had crossed the river twenty four hours before, taking over their families on "bull boats" and rafts. The next day he attempted to cross the Yellowstone, which at this point is 450 yards wide. The current was too swift and deep to swim horses and men, and the attempt to cross had to be abandoned for want of axes and rope. At evening his camp was discovered by the Indians. On the next morning (August 11) at daylight, he was attacked by about 800 Indians, who came down to the river and fired on his camp. The firing was returned for two or three hours, both parties using the trees as a cover. A party of 300 Indians then crossed the river above and below our camp, and endeavored to gain the bluffs in our rear. Our men were dismounted, and posted on the bluffs and received them bravely. The Indians behind the ridges kept up a galling fire until General Custer ordered a charge. Our men then mounted and pursued hotly for eight miles. Just at this time the train came up and opened on the Indians across the river with artillery; a few shots dispersed them and ended the fight. This battle, which took place within two miles of the Big Horn, was a fierce one. General Custer and adjutant Ketchum had their horses shot under them. Lieutenant Braden was badly shot in the thigh; Private Tuttle, General Custer's orderly, was killed and twenty of the soldiers were slightly wounded, We *had four horses killed* and three wounded. The Indians' loss is estimated by General Custer at forty killed and wounded. The Indians were well armed with heavy rifles and had abundant ammunition. Some were dressed in clothes procured at the agencies. These were mainly Uheawapao, supposed to be under command of Sitting Bull, and also supposed to have received their supplies from Fort Peck on the Missouri, a famous trading post for Indians and an infamous one for whites. Camp Cook is another of their supplies. A liberal appropriation by Congress was made last year for making the trading post at Fort Peck a military post, practically an appropriation for fighting our own armies. A large quantity of arms and ammunition was shipped to the posts as "hardware." These agencies sadly need investigation. The expedition arrived at Pompey's Pillar on the 15th, and reached the Mussel Shell on the 19. It is now homeward bound. Reynolds and Norris, two hunters, take this despatch to Fort Benton, 150 miles distant. General Stanly expects to reach Fort Rice by the 1st of October The health of the command is good. Lieutenant Braden is getting on well.

The following despatch has been received by General Sherman from Lieutenant General Sheridan dated "Chicago, Ill., August 29, 1873:"

General Stanly notifies General Terry that he has reached the Mussel Shell river, five *miles below Swimming Woman's creek*; that General Custer with his cavalry has had two affairs with the Indians—one on the 4th inst., the other on the 11th, in both of which he was entirely successful. Our loss was four men killed and one officer, Lieutenant Braden, of the Seventh Cavalry, and three men wounded; the loss of the Indians is estimated at forty killed and wounded. The veterinary surgeon of the Seventh Cavalry, Mr. Ballarum, a trader, and Private Ball, of Company F, Seventh Cavalry, have been waylaid and murdered by the Indians. Lieutenant Braden is doing well. General Stanly expects to reach the Yellowstone crossing again between the 9th and 15th of September.

THE following article entitled *Ericsson's Aggressive Torpedoes* is copied from the United States *Army and Navy Journal* of 6th Sept., and is the latest published document relative to that peculiar weapon of naval warfare.

Our readers will remember that we published a letter from the attorney of the proprietor of the *Lay Torpedo Boat* some time ago, stating that it had been submitted to a final test, and approved, but of this final test we have no published records. We hope for the benefit of society that the experiments now in progress with the *Ericsson torpedo* will not be kept quite so secret, but that an opportunity will be afforded to outsiders to criticize its merits. Our contemporary says:—

"We have received the following particulars from Captain Ericsson relating to the trial of his torpedo, now in progress on Long Island Sound. It was supposed previous to the trial that a steam tug would be necessary to tow the vessel which carries the reel and cable, and the steam machinery for compressing the air; but it has been found that the torpedo, which, as previously stated in the Journal, is eleven feet long, and twenty inches wide, has ample power to tow the vessel referred to, a scow forty feet long twelve feet beam, drawing twenty three inches of water, the sides being vertical and the water lines rectangular. The fact that the torpedo is capable of towing such a vessel, the form of which evidently produces maximum resistance, in addition to towing a water tender and two row boats, furnishes practical evidence of the propulsive power furnished by the vessel, and it is to be remembered that the compressed air which supplies the motive energy, passes through six hundred feet of tubular cable partially coiled on the reel, before reaching the torpedo engines. While towing the scow, the *torpedo projects half an inch above water*—as it does at all times when propelled at a rate less than eight feet per second. Accordingly, the top has been in full view while towing the scow and torpedo boats to and from the trial ground. Considering the very small size of the torpedo and large dimensions and unfavourable form of the scow, not to mention water tender and boats, the satisfactory speed attained is evidently a feature of considerable importance. It merits special notice that the motive engines of the torpedo, composed solely of bronze, have not required any adjustment whatever during the experiments, and that up to the present time no oil or grease has been applied to the crank journals, propellor shafts, or other moving parts of the machinery, all which work in *lignum vitæ* bearings, lubricated by the sea water, which freely enters the engine compartment.

The most important property of Captain Ericsson's torpedo boat being its capability to run under water, the efficiency of the means adopted for this purpose have been subjected to repeated tests. The result on all occasions has been that, on starting the propellors by admitting compressed air to the tubular cable, the torpedo (half an inch above water as before stated), begins to dip as soon as a velocity of eight feet per second has been acquired, and in twenty one seconds from the time of turning on pressure, the submersion of the body is completed, its centre of gravity having then descended to a depth of seven feet six inches below the water. The instrument which determines the extent of submersion is actuated by hydrostatic pressure, the mechanism remaining perfectly stationary until a given depth is reached, when the action is instantaneous, and any further depression checked. When the sea has been calm during the trial, and the speed of the torpedo kept up at the before stated rate of eight ft. per second, no appreciable fluctuation of submersion has been observed, nor has any increase of speed beyond, tended to increase or diminish the submersion. The position is indicated by a perpendicular central mast consisting of a light flexible steel rod, which readily bends in case the torpedo passes under drift wood or similar floating bodies. A circular disc three inches in diameter, painted white on one side, is attached to the upper end of the said mast, the latter being provided with certain marks, which, during the experiments, have enabled the operator to ascertain the exact depth of the water above the top of the submerged body. The instrument before referred to, by which the submersion is regulated, consists principally of a weight balanced by hydrostatic pressure. The extent of submersion may consequently be regulated by increasing or diminishing the said weight. The rudder being applied *above* the vessel, it will be evident however, that the submersion cannot be reduced beyond a certain limit, say two feet, *without destroying the steering properties*. Accordingly when employed as a tug boat the steering is effected by guy ropes regulating the direction of the torpedo.

It should be mentioned that the weight adverted to, which balances the hydrostatic pressure of the present torpedo, was determined *theoretically*, the intention being to bring the centre of gravity exactly eight feet below the water, the limit being called for in order not to run the torpedo under the intended targets, during the experiments The estimate of the amount of friction of the mechanism being somewhat too high, the weight is raised sooner by the hydrostatic pressure than anticipated, and hence the submersion arrested when the centre of gravity of the torpedo is seven feet six inches, in place of eight feet below water line as intended. Regarding the steering qualities, Captain Ericsson states that the result is abundantly satisfactory. By simply admitting more or less pressure of air into the tubular cable, the submerged body turns either to the port or starboard, a full circle being performed in a run of 400 feet, with the rudder hard up. When entirely submerged, the torpedo vessel has remarkable stability, owing to its form in connection with the position of the internal mechanism and the employment of bottom plates of half inch thickness, while the top is composed of plates less than one eighth of an inch thick.

It only remains to be stated, that in order