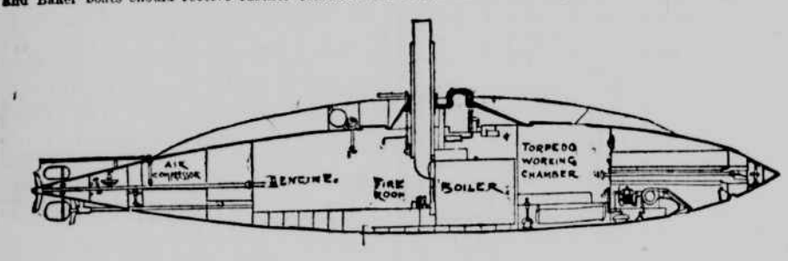
SUBMARINE BOATS.

TO FIRE TORPEDOES UNDER WATER.

THE NAVY DEPARTMENT IS TESTING THE WORK OF TWO FOLLOWERS OF CAPTAIN NEMO.

Washington, Aug. 11 (Special.)—There has been submitted to Secretary Herbert the report of the Board of Naval Officers, composed of Lieutenant Commander Sperry, Professor Alger and Naval Constructor Capps, to which was referred the plans and proposals of American inventors who recently submitted designs of submarine torpedo boats to meet the requirements of the Navy Department. The investigations of the board were as thorough as circumstances would permit. An examination of the plans submitted to the department showed that there were but two inventions which had been sufficiently worked out in detail to permit anything like practical conclusions as to their merits being arrived at. These two boats were those presented by the John P. Holland Torpedo Company of New-York and by George C. Baker, of Washington. The board recommended the adoption of the Holland boat, in view, it is said, of its greater number of special advantages. The Baker boat is regarded with much favor, however, and not a few officers preferred it to the Holland invention. Commodore Sampson, chief of the Bureau of Ordnance, under the cognizance of which submarine vessels come, thinks that several features of both the Holland and Baker boats should receive further consideration.



LONGITUDINAL SECTION OF HOLLAND SUBMARINE BOAT.

The claims of the inventors seem to conflict on several points, and the Commodore is of the opinion that the inventors should appear before the board and reconcile the discrepancies in their claims. Secretary Herbert said recently that Mr. Holland and Mr. Baker would be invited to again come before the board, and make such statements as seemed necessary to put their inventions upon an equal footing with respect to strength, endurance and internal arrangements. Both of these vessels are of novel design, and a description of them is highly interesting.

THE HOLLAND VESSEL.

Mr. Holland claims for his invention great simplicity of design, strength of hull, and certainty of action of the working parts of the vessel. In the argument submitted with his proposal to meet the Navy Department's requirements for a submarine boat, he says he has prepared plans of a vessel which can run awash at high speed, with a fair amount of armor protection; approach an enemy unobserved, and dive and attack rapidly and effectively. Scarcely secondary to these qualities, he says, is the power to rise to the surface and return to a safe depth quickly and without danger. The boat is designed to work on the surface while partly submerged or when at a depth of seventy feet below the surface. Its motive power is in duplicate engines and boilers, fed by coal or crude petroleum, for surface or partly submerged operations, and an electrical plant for service under water. In general appearance the boat is not unlike some of the small torpedo boats now used by England, France and Spain. The notable difference in appearance is that on the Holland boat there is placed an elongated oval steel superstructure, fifty-seven feet long, five feet wide at the base and four feet at the top. This superstructure is intended to reduce the resistance of the water when the boat is running awash or submerged, and also to afford air, light and storage space. The general dimensions of the boat are to be: Length, eighty feet; diameter, eleven feet; displacement, light, 118.5 tons; at load line, 137.84 tons. The engines are of the twin quadruple expansion type, capable of making 500 revolutions per minute, and producing eighteen pounds of steam per horse power. At high speed only two and a half, and at low speed, two pounds of fuel per horse power are required. The electric plant consists of one General Electric Company's seventy horse power dynamo and 345 Acme storage batteries. The speed of the vessel on the surface will be sixteen knots, with the superstructure awash, fifteen knots, and when running submerged, eight knots. Her endurance will be, on the surface, fifteen hours; when submerged, six hours.

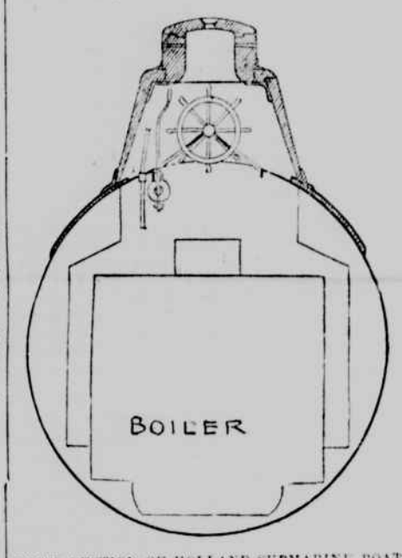
The boat's weapons of offence and defence are to be automobile torpedoes, which will be discharged from two expulsion tubes, one placed in the bow and the other in the stern. She will habitually carry five torpedos, although provision is made for two more. Her chief means of protection will be the water above, which will vary in depth with the will of the commander; it can be as much as seventy feet, as the vessel is designed to go that much below the water's surface. A depth of twenty feet can be reached in that number of seconds after the order to dive is given, the boat running light, and at full speed ahead, at the time. When partly submerged, and when the order to dive is anticipated, the operation of sinking to a depth of twenty feet will only occupy ten seconds. When nearing the enemy the boat can be submerged three feet, and by means of a camera lucida the commander can obain a good view of his surroundings, the water above being a safe protection against shot and shell. As a protection when running on the surface of the water, the boat has an armored turret, eight inches thick, rising four and one-half feet above the hull. The principal part of the hull is of one-inch steel plates. The shell is double for about three-fourths of the boat's length, aft of the stem. The internal distribution of space is arranged with a view to strength and safety. The forward open space within the inner shell is designed to afford room to operate the torpedo expulsion tubes. The boiler is incased in asbestos of a double thickness and an intermediate air space on top. The engines, condensers, pumps, blower, dynamo and connected apparatus are placed in the engine room. Every possible provision for light and ventilation seems to have been made. Each side of the vessel has eight dead lights, four of which are placed over the torpedo room, two over the boiler space, six over the engine room, and four over the space aft of it. Over the torpedo room is placed a companionway, four feet long and two feet wide. A similar passage is placed over the engine room. The rapidity with which the vessel can rise enables her to come to the surface at short notice for both air and light. An ingenious device, consisting of a float, tubes and valves, which will work at a depth of forty feet, does away with the necessity of coming to the surface when the boat is not deeper than that number of feet. The device can be connected with the electric motor, and, by easy manipulation, fresh air may be sucked down into the boat for an indefinite period. Air reservoirs are provided for use at greater depths. From them air is constantly allowed to escape. Vitiated air is forced out by means of a pump driven by an electric motor. The air reservoirs contain thirty cubic feet of air at a pressure of 2,000 pounds to the square inch. The amount is more than sufficient for the crew for six hours.

The method of operating the Holland boat is ingenious and efficient. If, when running on the surface of the water, it is desired to dive while the smokestack and air shaft are erected and the vessel is going ahead at full speed, Kingston valves placed on the bottom in the lower water spaces are opened, and the air contained in the spaces allowed to escape. The blower is stopped, the furnace and ash pit doors are closed airtight, being provided with fireproof backing. The smokestacks are lowered, and the cover of the apertures through which they pass is swung around, dropped into place and tightly clamped. By this time the vessel will be nearly awash. While reaching that position she is run in the direction in which it is necessary to steer, steam power being employed until the pressure in the boilers is run off. The simple adjustment of a lever connected with two large rudders placed on the stern of the boat causes the forward end of the rudders to tip upward and the vessel to descend. The angle of descent is about ten degrees. When the boat has nearly reached the depth at which it is intended to run, the lever is moved slightly in the opposite direction, causing the vessel to remain at the required depth. As soon as the horizontal position, at the proper depth, is obtained, an automatic apparatus will prevent further considerable movement in a vertical direction. If by the failure of any part of this apparatus the vessel should run to a greater depth than is desired, a given number of pounds of water can immediately be expelled, thus reducing the weight of the vessel by so much, and communicating a strong upward tendency. The first part of the submerged run is made with steam remaining in the boilers, but in about one minute the pressure of the boiler is exhausted and the temperature greatly reduced. Steam is then to be shut off, and the large dynamo started. The vessel will proceed on the submerged run with the power derived from the storage batteries. Should it be desired to stop, or lie still submerged, but not on the bottom, two small auxiliary water ballast spaces, or diving tanks, of about one-half ton capacity, placed one in the bow, the other in the stern, are allowed to fill with water by permitting the air they contain to escape through the pipes leading to the turret and opening Kingston valves below. If it be advisable to remain below the surface of the water the vessel when off soundings may be anchored, and the apparatus controlling the horizontal rudders adjusted to hold the vessel at the depth required.

The boat is brought to the surface from the submerged condition as follows: If lying still and anchored, the anchor is raised, and the upward force due to the reserve buoyancy permitted to bring the vessel upward, when the water ballast chambers may be emptied by an ejector or the ballast pump. If the vessel happens to be running submerged it is simply steered to the surface by the horizontal rudders, when the water may be emptied in the same manner. If it be necessary to perform this manoeuvre rapidly, air pressure, a few pounds greater than that due to the depth of immersion of the Kingston valves is exerted over the water in the ballast compartments, which will be quickly emptied. When the vessel reaches the awash position the smokestacks may be erected as rapidly as they were shipped, and fires under the boilers started afresh. With petroleum as fuel steam would be generated almost immediately. During an action it is thought that the dives will probably be very short, as the boat will be obliged to go under water only when menaced by torpedo boats running on the surface, and when it is necessary to secretly approach a vessel to be attacked. Mr. Holland states that he has no fear of rapid-fire guns or of torpedo boats. If dangerously near an enemy's vessel he would not remain on the surface long enough to permit guns to be trained on his boat. As the vessel can dive to a depth of twenty feet in about ten seconds torpedo boats with a speed of twenty knots can only run about 112 yards during that time, and will have little, if any, opportunity of inflicting damage. Provision is made against accidental drowning of the boat's crew, each man being supplied with a Fleuss diving helmet, kept conveniently near for rapid adjustment. Although the chances of disaster appear to be remote on account of the protection and double shell of the boat, yet should the interior rooms be broken into by any cause the boat can be allowed to fill with water until the external water pressure is balanced, when the companionway doors may be opened without difficulty and the men rise to the surface. The boat possesses a reserve buoyancy of about .66 ton, with .66 ton's weight of water in addition, which can be forced out of the vessel in a few seconds by compressed air. Provision is also made for forcing out two tons of water, carried in the ballast tanks, by a pump driven by an electric motor, and, as a last resource, by two small pumps driven by hand. It having been found practically impossible to compensate a mariner's compass so as to have it reliable in a submarine boat, Mr. Holland has invented a drag and connections of ingenious design to be used in determining courses to be steered. The stability of the boat is thought to be ample. When the vessel is submerged the centre of gravity will be sixteen inches below the centre of buoyancy; the metacentric height will be 9 7-16 inches. When the vessel is awash a complete all-round view is possible.

THE BAKER BOAT.

Although the first vessel invented by Mr. Baker showed satisfactory results in recent practical trials in Lake Michigan, much less is known of its design and mechanism than that of the Holland boat. It is regarded by many experts as having a number of advantages which adapt it to actual service. A board of naval officers, of which Commander Converse was the senior member, witnessed the experiments of the boat in Lake Michigan last year, and made a favorable report to the Secretary of the Navy with respect to its working at that time. From the information



CROSS SECTION OF HOLLAND SUBMARINE BOAT.

obtainable it appears that the boat can be partly or wholly submerged. The hull is constructed of steel five-eighths of an inch thick, and the ribs and beams of proportionate strength. The boat is designed to withstand a pressure of sixty-five pounds to the square inch at a depth of 150 feet. Its dimensions are 66 feet over all, 10 feet beam and 14 1-2 feet deep. Its total displacement is 150 tons. In general contour it is elliptical, somewhat flattened and wedge-shaped at the ends. It is self-contained throughout, and needs no shore connections to dive it. The propelling power is in duplicate, steam and electricity, the former for running on the surface of the water and the latter for submerged propulsion. The steam plant is so arranged that it can be used to generate electricity for charging the storage batteries. The electrical equipment consists of two 100-horse power motors, and 500 storage cells. The motors are designed for a pressure of 220 volts, and run at a maximum speed of 900, turning two four-bladed screws 400 revolutions a minute. The gearing is substantial and of steel. The motor is connected to run as a dynamo by a simple movement of convenient switches. When it runs as a generator it is speeded up to 900 revolutions, so as to give a charging power of 220 volts. In the top of the boat, within easy reach of the pilot, there is a convenient controlling switch connected with resistance coils in the forward end of the boat. By this switch and the circuit-breaker the speed may be varied as desired. The steam plant consists of a 250-horse-power engine and boiler. The stack is telescopic and can be lowered, and the stack-hole covered when fire is not required. The engine can be thrown into gear with the main shaft, and also be belted to the motor. There are two 36-inch propeller wheels, one on each side of the boat, connected with one shaft amidships. To the end of the shaft are fitted gear wheels, working on the gear attached to the propellers, which are turned at any position by means of a sleeve around the shaft. The location of the propellers on the side rather than at the stern of the vessel is the essentially novel feature of the Baker boat. According to the inventor, situating the propellers in the longitudinal and vertical centre of the boat—the wheels being so arranged that they are susceptible of being rotated around the shaft, pulling from it as a central pivot—allows the boat to retain its horizontal position while in motion, either forward, backward, upward or downward. Mr. Baker thinks that the stern propeller has a strong influence in causing the vessel to dive eccentrically, and consequently to be decidedly dangerous and uncertain. He also says that the side wheels permit a vessel to be carried forward on the surface, or to descend at any degree desired, and remain at practically any position when submerged, either at rest or in motion.

Before beginning a run with the Baker boat the pilot and crew enter through a manhole in the conning tower. A cover is then drawn over the hole and fastened, and the boat is made airtight. Water is admitted by opening valves, and two or three tons are let into the water bottoms, this additional weight leaving nothing of the boat above the surface except the top of the hull and the conning tower. To sink directly downward the propellers are turned perpendicularly, and the shaft and the motor are started. The amount of spare buoyancy determines the amount of power necessary to sink the boat. When the desired depth is obtained the propellers are turned at an angle of about 45 degrees, and the boat is propelled forward, neither rising nor sinking unless the pitch of the vessel is changed. When the commander wishes to ascend, the machinery is stopped and the reserved buoyancy causes the boat to rise to the surface, or should that not be sufficient for the purpose the propeller wheels may be deflected upward and achieve the same end. Any accident that would stop the machinery would also cause the boat to rise to the surface. The storage battery plant is designed to contain enough power to run the boat five to seven hours at a speed of eight miles an hour. The boat's armament will consist of torpedoes and expulsion tubes. Torpedoes will only be discharged from the bow of the vessel.

GOV. WAITE MAY CALL AN EXTRA SESSION.

Denver, Col., Aug. 12.—Friends of Governor Waite say he has determined to call an extra session next month after his return from an Eastern stumping tour. A muddle in the law authorizing a $1,000,000 canal, makes this necessary. The Governor will also recommend changes in the attachment and trust deed laws. Further recommendations will depend on Congressional action on silver.

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via picturesque Erie Lines.
Next personally conducted special excursion train leaves New-York, Chambers-st., 10:15 a. m. Tuesday, August 15; arrives Chicago 4:15 p. m. next day. New and elegant passenger coaches, with high back seats. Uniformed porters in attendance. Special coaches assigned to families and ladies without escort. Tickets good ten days, with privilege of returning via Niagara Falls. Similar excursions will be run on August 21 and September 2, 6 and 12.

SELECTIONS FROM THE MAIL.

FOR A PERMANENT BANKING SYSTEM.

A PLAN UNDER WHICH DEPOSITORS WOULD HAVE ABSOLUTE GUARANTY.

To the Editor of The Tribune.

Sir: The power of the Federal Government to establish a bank was sustained by the Supreme Court of the United States in the early history of the country. This power was not among the enumerated powers found in the Federal Constitution, but was declared to be incidental merely and therefore exposed to controversy between strict and liberal constructions of the Constitution. Public sentiment shrank from this interpretation of the Constitution and the bank so established disappeared.

The present system of National banks came into existence as a temporary device for floating the National debt. They were improvised instrumentalities for raising money to carry on the war; they were not designed to be permanent; they will, by their constitution, cease when the function for which they were created is performed; they will disappear with the extinction of the National debt. They displaced State banks by the legal preference given to them, and will themselves be displaced in turn by State banks at the end of their career, unless a new and superior system be provided. The constitutional power of the country over money is at present chaotic. The Federal Government has the exclusive power to coin money and to regulate the value thereof. The States have power to make gold and silver coin legal tender, and have power also to establish banks. As the Constitution now stands, the power to coin money and to regulate the value thereof, and to make the money coined a legal tender, and to establish banks, is divided between the Federal Government and the State governments. This division into fragments of power over money permits derangements of values, and produces a lack of uniformity in the laws in respect thereof and of the value of the currency itself. This condition was realized before the war. Under the Constitution, as it now stands, the States are not permitted either to issue currency or bills of credit themselves, or to have the power to give conclusive legal-tender character to the currency or bills issued by the banks they create. State banks, by reason of the lack of constitutional power in the States to insure their solvency and make them impregnable, are exposed in time of panic to two perils. First, the bill holder will hasten to the bank to redeem his bill in coin; second, the depositor will withdraw his deposit. State banks, though wisely and honestly managed, are left exposed, by lack of power in the States to protect them, to every wave of distrust that sweeps over the country. Progress has been so great since the old State banking system served the country, and the public has become so accustomed to the supremacy of the Federal Government over interstate commerce and the general business interests of the whole country, that it is almost impossible to turn the current of public favor back to a system of banks which seems to be outgrown, and which, at best, is, in its nature, perilous. If this be so, a new system must supersede the old. The way to this is quite simple. That provision of the Constitution of the United States which empowers Congress to coin money and to regulate the value thereof should have added thereto the following words: "and to establish a uniform system of banks." Congress could then supplant the present temporary and inadequate system with a uniform and permanent one. Through this new system, whatever currency the Government authorized could reach the people. The currency so put out would never be distrusted, inasmuch as it would have the advantage over State bank currency of being constitutional and therefore never doubted. The Government could, and should—having complete jurisdiction over the subject—provide that all banks incorporated under Federal law should have a Government director whose duty it would be to make frequent truthful reports of the condition of his bank to the Secretary of the Treasury. The Government should also guarantee the depositors from loss, though primarily holding the stockholders. This would not be an unreasonable liability on the part of the Government, inasmuch as it would have supervision of the banks at all times and knowledge of the solvency of the stockholders, while the depositors would not have such supervision and knowledge.

There is no communism in this. It does not involve personal liberty, the invasion of which by the Government leads toward communism, but it is a mere business regulation introducing into a disconcerted and unsound money system the principles of stability and security. Money, its quantity, of what coin composed, its distribution for value, the stability of banks, all depend upon the intelligence and wisdom of the Government. People, compelled under the laws of business to have intercourse with Government institutions, are entitled to rely upon the soundness of such institutions and upon their honest management. The Government admits this duty and liability under the present system. It provides bank examiners, by which it acknowledges the duty resting upon it to discover and arrest the insolvency and mismanagement of the banks which it creates. To exercise the power of supervision well is not more communistic than to exercise it ill. The citizen, driven by the rules of business to rely upon institutions created by the Government, should not be required to bear the loss resulting from the infirmities of such institutions. Fewer banks suspend at the present time from actual insolvency or dishonesty in management than from public fright. The Government has the power to control these and should exercise this power.

Neither would there be any serious risk to the Government in the matter. A small general tax on banking capital would indemnify the Government against any loss not made good by the stockholders to depositors, if such loss should occur, in exceptional cases. No run on the banks would take place under this plan. The currency being authorized by the Government, and the depositors being finally guaranteed from loss by the Government, the full volume of the currency of the country would be kept in circulation up to the demands for it, and it would not be withdrawn and hidden away by frightened depositors, as is now the case, in periods of financial depression, when currency is most needed. Existing banks could be brought under the new system without shock. Internal and other revenue collected by the Government could be deposited until paid out, in banks situate in the community where so collected, thereby preventing, in a measure, withdrawal of large bodies of money from circulation and also its accumulation in one section of the country.

JEFFERSON CHANDLER.

New-York, August 4, 1893.

AN ANTI-RUSSIAN TREATY SOCIETY.

To the Editor of The Tribune.

Sir: Knowing your opposition to the extradition treaty recently made between this country and Russia, we take the liberty of asking you to tell your readers that a society has been formed in this city to agitate for "the abrogation of the Russian extradition treaty." The society wishes everybody in sympathy with this object to become a member. The membership fee is $1, which will be received by the treasurer, Henry A. Oakley, No. 62 Williams-st. General Francis C. Barlow is the president.

HENRY D. SEDGWICK, JR., Secretary.
100 Broadway.

New-York, August 9, 1893.

WE MUST NOT FIGHT THE WORLD.

To the Editor of The Tribune.

Sir: It is human nature to blame somebody for things happening against our wishes. The silver men blame Wall Street and capitalists for the low price of silver and the depression in business. Why do they not blame Wall Street for the closing of the Amoskeag factory? Is the closing not caused by the lack of orders? Is the depression of business not caused by the lack of confidence? Is the lack of confidence not caused by these same silver men, who try to put it on innocent shoulders? The business of a country cannot be regulated by theories; the practical experience alone knows the necessities of trade. The whole world is one chain. The first depression in business was felt in Wall Street and it gradually affected everybody, from a drygoods man down to the hack-driver. The depression is just as unpleasant to the Wall Street man, who handles Millions, as to the hack-driver, who handles dollars. Who is to blame for it? According to my judgment the blame lies with and can be traced to the silver men. The forcing of a financial policy contrary to the prevailing system of the leading countries of the world was sure to bring disaster.

Just as desirable as it would be if cotton would sell at 10 cents a pound or wheat at $1 a bushel, is it that silver should bring its former value. Could the Government afford to buy cotton enough to keep the price at 10 cents? Is it not necessary to establish the price according to the consumption? If more is on hand than needed it is sure to be lower, notwithstanding all purchases of the Government. An article which is found and raised in many a country besides this cannot be controlled by us alone. If our prices are too high the foreign consumers surely would buy in other markets and only under compulsion would come to us. Silver could only be used as a standard after its value had been regulated on a basis the same all over the world.

To bring about this desirable result it is necessary that the whole financial world agree. One country alone cannot regulate the matter. We are in the position to force the European countries to this desirable end by absorbing as much of their gold holdings as possible and, as the possession of gold forms the basis of credit, weaken their credit. As soon as this is accomplished they will gladly join us to place silver at a standard value. Our single-handed fight is bound to result in loss to us. Our enormous manufacturing, agricultural and other interests are carried on partly by foreign capital, and to estrange them—some through an indefined financial policy is foolishness, to say the least.

Let us repeal the Sherman silver law; increase the gold holdings to as large an amount as possible adequate to the volume of business; support by the Government all legitimate banking business; and increase the National bank note circulation.

If those points are carried out as speedily as possible an unprecedented prosperity will follow, and Europe will soon be forced to accept our wishes about silver.

E. LYON.

Hot Springs, Ark., Aug. 3, 1893.

TWO EX-CONFEDERATE GENERALS.

SOME CONSIDERATION OF THE CONTROVERSY BETWEEN THEM.

To the Editor of The Tribune.

Sir: In the somewhat one-sided discussion between General Longstreet and General Dabney H. Maury, both of the late Confederacy, it does not appear that any very important matter is involved. General Maury is engaged in denouncing General Longstreet, not because of any alleged default during the melancholy four years in which they were both in arms against the Union, but for the reason that he (Longstreet) exercised his privilege afterward as a rehabilitated American citizen, and aligned himself with the party and the principles that commended themselves to his deliberate judgment. General Longstreet contents himself with pointing out his accuser's errors and inconsistencies, and leaving the latter the free use of all the rope he needs for his permanent strangulation.

There is this to be said for General Longstreet, however: He was as sincere and as courageous in his political course as he ever was in any of his military operations, and he has given no man the right to say that he was thrifty in his so-called apostasy. Longstreet espoused the Republican party's cause at a time and under circumstances when real heroism was required in the operation. It happened in New-Orleans in 1872. My information is to the effect that he was rather betrayed into the final step.

There had been a more or less serious agitation among the older and more responsible citizens looking to an alliance between them and the negroes as against the Democratic rabble, the great unwashed, and the hungry horde of carpet-baggers who were at that time swarming to the rich plunder there displayed. In this movement, so long as it was confined to mere talk, a great number of the leading men of Louisiana, old slave-holders, ex-Confederates, men of large property and commanding influence, were ostentatiously engaged. Prominent among them was General Beauregard, the idol of the French Creoles, and others of like importance. These men believed, or professed to believe, that the true interests of the intelligent whites lay in a frank and unreserved acceptance of the results of the war, and in a combined effort to make a fresh beginning under the new dispensation, without reference to the things that had been settled and left behind. There had been conferences without number, and at last an overture was formally made. The leaders among the colored people were invited to meet the prophets of the reformation at Exposition Hall and discuss the details of a lasting unification. Such men as Pinchback, Joubert, Ringgold, Casenave and Antoine on the one side were asked to join Longstreet, Beauregard, Hill, Mitchell, and the long list of the white leaders on the other side in a fraternal conference for the common good. The day was fixed, the motive was discussed and generally applauded, and Longstreet, straightforward and sincere, as was his wont, found himself on the appointed occasion practically alone. His coadjutors, influenced by some hidden but potent force, had fallen away from him, and he found himself isolated by his own good faith and sturdy loyalty from all his old associates and friends. Even then he could have recanted and saved himself—it was the fashion of the time, and the temptation, one can well believe, was strong. But he would not do it. He stood by his deliberate declarations, endured all the denunciation, accepted the repudiation of men who had persuaded him, and planted himself irrevocably upon the ground to which his conscience and convictions had guided him.

If there be anything in this record which gives General Dabney H. Maury a right to turn his back upon General Longstreet, I fail to recognize it. He believed then, as most intelligent Southern men are ready to acknowledge now, that the true interests of his section lay in a manly submission to the decree of fate. He was betrayed and deserted by associates whose cowardice forswore the dictates of their sober sense, and rather than deny the truth and stultify himself he became an exile in the land and among the people in whose cause he had risked his life a hundred times.

Nothing is more absurd than to say that Longstreet had a sordid and unworthy motive. Even had he been capable of that, it is a fact that what he did commended him as little to the Republican leaders of the time as to those called Democrats who first promised and then abandoned him. He was engaged in an effort to destroy the rapacious and sinister machine which vagrant adventurers were building upon the blindness and folly of the Southern whites. He made himself hated by both—to the adventurers because he threatened their untoward plot, and by his former associates because his steadfast courage convicted them of cowardice. The set resented his attempted interference with their scheme of plunder. The other could not forgive him for having made them blush.

I do not quite understand what General Dabney H. Maury is trying to prove. He who accepted an office from Mr. Cleveland can hardly propose to denounce Longstreet for having accepted an office from U. S. Grant. And for the rest, Longstreet may at least submit his record to a comparison with that of Maury, whether on the dark and bloody fields of the Civil War or in the fateful civil evolution that lifted the South from turbulence up to the shining heights of peace.

S.

Washington, D. C., Aug. 4, 1893.

LITTLE IS LEARNED BY VIVISECTION.

To the Editor of The Tribune.

Sir: As there has been so much said and written of late about Dr. Keen's article upon "Brain Surgery" in the June number of "Harper's Magazine," and as it has been supposed by many to demonstrate the great amount of knowledge gained by experiments upon animals, and the great amount of benefit to mankind accruing from these experiments, I beg you to publish this letter on the other side of the question, and to allow me to show to the public upon how slight a foundation Dr. Keen bases his claim to new discoveries and to knowledge of importance gained by the torture of helpless creatures that God has placed in our charge. He says that the whole surface of the brain was mapped out and the motor areas determined by the experiments of Ferrier and other scientists upon monkeys. He says that brain localization, as it is called, was due to this cause, and that the discovery of an affection of the head influencing limbs on the other side of the body was made through this means. Let us see what the English surgeon, Dr. Berdoe, in a recent letter says on the subject: "I have before me Gall and Spurzheim's famous treatise on the brain and nervous system, the date of which is 1815. On page 33 of this work we read: 'This structure was known to the ancient anatomists, as to Misichelli, du Petit and Santorini; but it has been overlooked or denied by modern anatomists.' It explains why injuries of the head influence opposite sides of the body, and as only a part of the brain is by decussation in communication with the nervous mass of the body, it is evident and easily understood why palsy of the body or convulsions produced by injuries of the head are observed sometimes on the opposite and sometimes on the same side.'

"There are many more things to be found in Spurzheim's book which are claimed by the vivisectors of to-day as brilliant discoveries of their own, made upon the brains of living animals."

Now, in answer to the benefits which Dr. Keen would have us believe are conferred upon mankind by the removal of brain tumors, in 75 per cent of which operations he stated that the patients recover, another English surgeon, William Thorburn, a Fellow of the Royal College of Surgeons, in an article he has written on "Brain Surgery" in "The British Medical Annual" for 1893, says: "The majority of tumors cannot be extirpated, as the symptoms of general pressure mask the special effects and thus render localization impracticable. Among those again (that is, those capable of being removed) we can operate only upon those which are in or near the cortex, not too large, well encapsuled, and not metastatic. Keeping within these limits, it is estimated that about one-third of the cases operated upon have recovered, and the successful cases almost invariably presented subsequent paralysis of that portion of the cortex submitted to operation." Mr. Thorburn goes on to say that "cases of abscess of the brain are more favorable for operation, as they can generally be localized, but experiments upon animals have not helped us to this kind of localization in the least." We can see now how little Dr. Keen has established his claim that any discoveries of importance to mankind in the treatment of brain diseases have been gained by vivisection. It has been shown that brain localization was established long before the time of Ferrier and his coworkers, and it is denied that it was ever learned by means of experiments upon animals. We see also that operations for the removal of brain tumor are of such doubtful benefit that many of those who survive are scarcely improved in condition, as they afterward develop paralysis; so it is no wonder that an English doctor, speaking at a public meeting the other day, said: "For my part, if I had the misfortune to have a brain tumor, I should prefer to keep it." Let any one examine the account which Dr. Keen himself gives of the various cases operated upon for brain troubles, and see how few of them really got well. I have heard also from outside sources that one at least of those he mentions was left in a condition worse than death. No, the vivisectors and the enthusiastic advocates of vivisection like Dr. Keen are always looking forward to great discoveries by means of experiments upon animals, which are never made. It cannot be in the designs of a merciful God that we should gain knowledge by the long continued torture of creatures that are the work of His hands. The experiments that are constantly being performed are almost indescribable, so great is their atrocity. Only a few weeks ago a friend of ours visited incognito the laboratory of an eminent vivisector in Italy. He saw a poor little poodle dog, bound in a strained, unnatural position, by its four legs to the vivisecting table. Its mouth was bound so that it could only moan; not the slightest anaesthetic of any kind was given to it; it was ripped open and its entire stomach removed. The object of the experiment was to see how long it could live without a stomach. It lingered in this agonized condition from about 10 o'clock in the morning till some time in the night, when it died. Can any one who has any religious sentiment whatever believe that such proceedings meet with the approbation of a merciful God, or that He will allow us to gain any knowledge of importance to the human race by such means?

CAROLINE EARLE WHITE.

Corresponding Secretary of the American Anti-Vivisection Society.

Nantucket, Mass., July 20, 1893.

THREE-FIFTHS GOLD, TWO-FIFTHS SILVER.

To the Editor of The Tribune.

Sir: The writer has a plan for disposing of the "dollar question" which he believes to be new, not alone as regards the mechanical nature of the coin proposed, but particularly as regards the proportions of value in gold and silver, on which he would found, first, the specie dollar, and, second, the entire issue of paper money, which should be directly controlled by the Government. He recognizes at the outset a few plain, hard facts which we cannot get away from if we would.

Fact 1—We are where we are, not beginning a system with the way all clear, but having already a ponderous amount of money in circulation, consisting of, or based upon, the two metals, gold and silver, these metals being in coin form or in bullion stored by the Government for coinage.

Fact 2—Under the patronage of the Government, largely, a great industry in silver mining and smelting has grown up, with attendant increase of population, and encouragement of all sorts of manufacturing, stock and produce raising, mercantile business, freight and passenger traffic, and so on.

Fact 3—The money of one is inevitably the money of all, and the interest of one should be the interest of all. A sound policy would be for mutual benefit, an unwise one for the hurt of all, East, West, North or South. Consequently we should pull together.

Fact 4—We have said, like other nations, that silver shall be thus and so, yet the tendency of both nations and individuals eventually, whatever be the temporary feeling, is to rely on gold. By a sort of magic it rules all values, whether you say "if" or "and" or "might" or "should," and though you call on financiers or economists or legislators to haul and twist and "therefore" to the very end. There's where we are to-day, and there we will likely find ourselves in future in spite of law or logic.

Now, shall we be extremists? Shall we say good-by to silver, or, on the other hand, shall we deny the over-ruling, all-compelling power of gold and cry aloud for silver, oceans of silver, deluges of silver, salvation by silver, in spite of all the past? Somehow we shall have to marry gold and silver over again. An estrangement has sprung up between them. They belong each one to the other, and perhaps by and by will be the better for this little "falling out." So marry them first in the individual coin, not by amalgamation, for this has often been proposed, and seems not to be feasible. Such a mixture would be too uncertain. The parts would not be easily discerned as genuine. Nor should the coin be simply gold and silver joined by contact. This, too, has been proposed, but with difficulties in the way of detecting the intended ratio of the parts, and with false ideas as to what the ratio of said parts should be in the beginning. If desirable, gold can be made of three-fifths value in gold and two-fifths silver, the gold being placed in the centre and being thinner than the outer part, or rim. Silver may constitute the rim. First revalue silver, then make the dollar pieces on this plan. The proportions of value named will be found to furnish such proportions also in bulk as to be practical for the dollar coin. The gold is so set into the silver as to show most of its rim, or, in other words, a space exists about the larger portion of the gold, showing up its dimensions at a glance. An accurate measurement of each part is easily made by a gauge constructed for the purpose, which measurement, of course, necessitates the proper weight. The coin will "ring," as would not the duplex coins such as have been heretofore experimented on in models. The wear comes on the silver portion, scarcely at all upon the gold. Having two parts and two metals, the dollar would not be easily counterfeited, as may be the present silver dollar. Moreover, the coin is a very graceful one, and smaller than the "cart-wheel" coin of silver. A model has been prepared and forwarded to the Secretary of the Treasury at Washington.

Set a time within which all the present silver dollars shall be retired. Coin hereafter none but the duplex or married ones of gold and silver. Coin fractional pieces of silver as now. They are for convenience, and are not likely in themselves to harm the credit of the Nation. The trouble now is with the unit dollar. It has been coined too freely and too cheaply, and runs too far away from gold. Such a coin as proposed would be as reliable, it would seem, as anything possible in metal form, aside from gold entire, and, as has been found, that is not practicable to handle in the dollar piece. If the new coin should vary, its variation need not prove disastrous. The decrease would be but a fraction of a fraction of its value, three-fifths being always assured in real gold. Overcoinage of silver would be avoided, as every part of silver must be mated with its proportionate amount of gold. Quite an advantage of the proportion of fifths is that, being convertible into tenths, they come at once into the metric system, on which the coinage of other nations is somewhat built, and on which a system of international coinage may some time be wrought out. No one can fail to see the desirability of an international metal dollar.

Next, call in all paper money. Let the Government issue in place thereof certificates in convenient denominations, redeemable each in three-fifths gold and two-fifths silver. Coin the larger gold pieces with limit, to be used in settling balances with other nations. The effect would be that business would be done mainly on certificates and not on actual gold and silver, while in every transaction gold, being in the ascendancy, would be recognized as fixing value. Silver would maintain its place, not first, but second, and so mated with gold as nature in her distribution of inherent gifts has seemed to tell us would be proper. The world's supply of gold and silver could keep this marriage good. Why may not the nations join to bless the bans? A dollar here, a dollar everywhere! Amen and hallelujah!

EDWARD L. MORRIS.

Minneapolis, Minn., Aug. 1, 1893.

TORTURE BY THE ELECTRIC CHAIR.

To the Editor of The Tribune.

Sir: Strange as the statement may seem, the horrible bungling that attended the execution of the murderer Taylor at Auburn on Thursday was really a step in the right direction. A few more such performances as this and capital punishment would soon be improved out of existence. The accounts of the manner in which the unfortunate negro was done to death sent a thrill of horror through the entire country. The electric current was turned on, but while the man was still alive the dynamo gave out, so that he slowly came back into a state of being in which he could breathe heavily and groan, and finally had to be carried away on a stretcher and quieted with morphine. An hour later a second current was sent through him and he died. Whether this shocking spectacle was due to lack of sufficient precaution in preparing for the execution, or whether it was caused by some unavoidable defect in the apparatus of death remains to be shown. The matter is one demanding immediate investigation. If it is proven that the prison authorities are to blame, the entire civilized humanity will unanimously condemn such shocking negligence. If, on the other hand, it turns out to be due to the fact that we are as yet unable to control the electric current, then the law should be repealed. It must not be forgotten that in 1889, when execution by electricity was substituted for hanging in New-York State, Edison described the change "an awful experiment." "Unless," he declared, "its advocates are prepared to kill their man with an axe if the machinery fails them, execution by electricity had better not be tried." The Auburn horror, however, should not be used as an argument in favor of a return to the gallows. Failures to produce death by hanging have been and are frequent, and they are attended with circumstances of horror and brutality that do not attach to the electric chair. Execution by electricity was decreed by the State because it was believed that the death penalty might be more certainly, swiftly and decently inflicted by that method. But whatever form the death penalty may take, an imperative obligation rests on the authorities to see that nothing gives out or breaks down in its infliction. It is passing strange that in these days of advancing civilization we should still stand by the Mosaic creed—an eye for an eye, a tooth for a tooth, a life for a life. Whether or not the worse use to which a man can be put, criminal though he be, is to kill him is a problem which has been discussed time and again by competent authorities. There is much to be said on both sides of the question. So long, however, as the old barbaric law which commands us to take the lives of those who have taken life remains in force, we are at least bound to perform that awful work within the border lines of humanity. The electric chair or the gallows should never be allowed to become instruments of torture.

CHARLES ROBINSON.

New-York, August 2, 1893.

HENRY WHITNEY BELLOWS.

To the Editor of The Tribune.

Sir: Henry Whitney Bellows, the son of the late Dr. Bellows, of All Souls' Church, in this city, and of Anna Peabody, his wife, was drowned in Buzzard's Bay on July 15. He was a youth of rare and brilliant promise as would have been looked for in one who was the son of one of the most eloquent men of his time and the grandson on his mother's side of another, the Rev. Ephraim Peabody, for many years the minister of King's Chapel, in Boston, the very nucleus of that intellectual centre. To all who knew him he was an enthusiastic, responsive, lovable boy, combining an almost feminine gentleness with earnest purpose and manly force, unvarying courtesy with a light-hearted gayety that was contagious and captivating. No one who knew him could fail to be attracted by his charm of mind