Mountain Sentinel.

"WE GO WHERE DEMOCRATIC PRINCIPLES POINT THE WAY;—WHEN THEY CEASE TO LEAD, WE CEASE TO FOLLOW."

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TERMS.

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From the New York Herald.

THE CALORIC SHIP ERICSSON.

Successful Trial Trip—General Description of the Ship—Another Great Commercial Enterprise.

In the great commercial and shipping circles of the world, nothing has excited more interest of late than the novel discovery and enterprise of Captain Ericsson, by which steam as a motive power is to be supplanted by caloric, or heated air; and nothing but the successful application of the actual test could remove the skepticism with which, generally, the project has been viewed. This test has, however, at length been furnished, and now all doubts of the practicability and importance of the invention are dispelled. The Ericsson, constructed on the new principle, made her trial trip on Tuesday morning down the bay of New York, and from the complete triumph with which the experiment was attended, there need now be no hesitation in acknowledging caloric as a great natural element adapted to locomotion, destined to work a complete revolution in navigation, and to confer an inestimable benefit on mankind.

The Ericsson was put under caloric early on Tuesday morning, and started from Williamsburg between 9 and 10 o'clock. At 9 h. 55 m. she passed the flagstaff on Governor's Island, and at 10 h. 36 m. and 30 seconds she was abreast Fort Diamond, *thus making a distance of seven and three-eights miles in thirty-four minutes and thirty seconds.* From thence she proceeded down the bay, rounded to below Spithead buoy at 11 h. 21 m., and there anchored in consequence of a snow squall. She returned on Wednesday, and anchored off the Battery at 2 o'clock in the afternoon. The distance between the stated points on Governor's Island and Fort Diamond being accurately known by triangulation to be seven miles six hundred and sixty yards, the speed attained was as stated, about fourteen miles an hour. *The consumption of fuel is ascertained to be only six English tons per twenty-four hours, a saving as compared with steamships, of more than eighty per cent.* As the ship draws 16 feet 10 inches on an even keel, this performance at a first trial has astonished all concerned in the enterprise.

The great idea which had for more than twenty years been ripening in the brain of the inventor, but which, from the incredulity and opposition he encountered among men of capital in his own native country, in England, and in America, he had been unable to realize, has thus been substantiated as a real entity. It was fortunate for Captain Ericsson and for the world that one of our own enterprising merchants, John B. Kitching, Esq., who appreciated and relied on his talent and genius, determined at all risks to enable him to make the experiment on a scale worthy of the magnitude of the issue. For this purpose the latter furnished half of the capital necessary for the enterprise, and disposed among his acquaintances of the remainder of the stock. By this means, and regardless of expense, the clipper ship whose first performance we have recorded was built at the yard of Perrine, Patterson & Sack, and fitted up with enginery on the caloric principle under the immediate direction and supervision of Capt. Ericsson. The vessel measures 260 feet in length of deck, and 40 feet in breadth of beam; her depth of hold is 27 feet, and her burden 2,200 tons. Like the Arabia, of the Cunrad line, she has but two masts and like our swiftest clippers, she is extremely sharp in the prow. She has no figure-head. Her stern presents the device of two figures, allegorical representations of the United States and Great Britain placing a wreath around the brow of the inventor. She had been originally named the Caloric, but in compliment to the genius who planned her, her name was changed to the Ericsson. This was considered by Captain Ericsson a high tribute to himself, but the flattering device which was placed upon the stern without his knowledge overwhelmed him with emotion, and we are told that when he first saw it he wept like a child. The Ericsson presents a very handsome and unique appearance, from the four white funnels which rise some ten or twelve feet over the promenade deck, and which somewhat resemble Ionic pillars without the capital. They are thirty inches in diameter, and are supported by octagonal pedestals, also white. Two of these columns, or pipes, carry off the air from the engine, and the other two serve as chimneys. Around their tops they are ornamented with gilt rings and moulderings. These gilt ornaments are now, after ten days' firing, perfectly bright. Entering the spar-deck, the absence of any crank hatches, and a clear deck for two hundred feet on each side of the deck-house attract the eye. The berth-deck likewise presents an unbroken line, with state-rooms along the entire ship, and passages between the fore and aft saloons on both sides.

As a model of naval architecture, there is not a vessel in our splendid merchant marine that can compete with the Ericsson for graceful proportions and symmetry of build. All who have seen her concur in the expression of admiration of this beautiful ship, and in their opinion of her superior sailing qualities, independent of any aid from her machinery.

For obvious reasons, those interested in the undertaking have observed great caution and jealousy to prevent any knowledge of the construction of her machinery, &c., from getting abroad. To guard against this, portions of it were made at various places—New York, Philadelphia, West Point, &c., from plans and specifications furnished by the inventor. So perfect and true were his calculations, that every piece of the machinery thus made, fitted in with the utmost exactitude, so that, to give the language of one of the persons engaged in it, a sheet of tissue paper could not be put in between the joints. This circumstance, in itself, speaks well for the great engineering skill of its constructor. The same jealous caution was observed in permitting strangers on board. The exclusion of all outsiders has been very rigidly enforced, so that the hundreds whose curiosity brought them to visit her were forced to content themselves with a distant inspection. Thus, up to the present time, no correct description of her has appeared in type; and we therefore feel confident that that which we now present to our readers in relation to this remarkable vessel will be read with an interest proportionate to the invention, of which the Ericsson is the first embodiment.

Let the reader, therefore, accompany us as we are chaperoned throughout the ship by her gallant and polite commander, Capt. A. B. Lowher, to whose ability and experience as a navigator she has been well confided.

Let me first show you, says our guide, the freight deck, and then we will ascend and examine her, in detail. To the freight deck, therefore, we descended, and were pointed out its capacity, extending as it does some 260 feet. It is entirely free from obstruction of every kind, excepting only a space along the middle, which contains the cylinder, enclosed within strong bulk heads. None of its room is to be devoted, as in steamers, to the carrying of coal which is stowed away in sufficient quantity each side of the engine. It is calculated thus to carry 1,400 tons of teas, or other light merchandise; or, if engaged in the Australia or California trade, it is well adapted for accommodating some four or five hundred passengers. A ventilator on a new principle, and connected with the machinery, extends to this deck.—About midships there is a sort of a square enclosure, which, we learned, communicated only with the main deck, and which has been fitted up for female servants of cabin passengers.—This is a great improvement on the present plan, which makes little or no provision for this class of travelers. We found this room neatly and comfortable furnished, with twelve or fourteen berths, and conveniences for bandboxes and the various et ceteras of waiting women.

From the freight deck we ascend by a wide stair-way to the main deck. This is occupied from stem to stern by sixty state rooms; those in the aft cabin fitted up with two berths each, and those in the forward cabin with three. We inspected the latter portion first, and were struck with the elegance and taste with which it was fitted up. We were immediately reminded of the motto, which we saw in a conspicuous position on the board—"Everything in its place; and a place for everything"—and we felt the conviction that this maxim was not lost sight of in the construction and fitting up of the ship. The state rooms communicate direct with the saloon by a gothic arched door, which opens on every two rooms. They are richly carpeted and are lighted by day with deck and side lights, and by night with a three-sided lamp, so fitted in the panelling as to furnish a light at the same time to two rooms and the saloon. These lamps are provided with a lock, and are to be in charge of one of the employees. The berths are handsomely fitted up; the mattresses are composed of the best curled hair; and the bed-clothe are also of the whitest and finest texture, and marked with the word Ericsson in red letters. A marble slab wash-basin and appurtenances belong to each room; and on the side opposite the berths is a sort of day sofa, which answers the very necessary use of a receptacle for soiled clothes and boots. A small bronzed framed mirror, with a pivot which permits it to be turned in every direction, completes the furniture of these apartments. We must not forget to mention that a fine room is also fitted up here for the accommodation of the waiters connected with the vessel, who are obliged on other ships to stow themselves away under the tables and elsewhere. Fourteen double berths are provided for them, and all the conveniences of water-pipes, wash-basins, mirrors, &c.

The forward cabin saloon is very handsomely furnished, and presents a chaste appearance, from the gothic style of the doors, which open into the state rooms, and from its general decorations. The chairs and sofas are covered with crimson plush, and are of the neatest pattern. The carpets are of a very rich and beautiful material, the design representing the American flag interspersed with the forest foliage, &c.—The panels are painted white, shaded with a light tinge of purple, and decorated with gilding. The device round the cornices, on raised gilded work, represents Neptune in his chariot, drawn by sea monsters. In fact, the only point of distinction between the aft and forward cabins is, that the rooms of the latter are fitted up with an extra berth; and, if it were judged advisable to have a uniformity of price for passage, the plan could be easily carried into execution, it being only requisite to take away the third berth from each of the forward cabin state rooms. For the saloon there is a steward's pantry amidships, provided with neat delph, glass, cutlery, &c., and communicating by a dumb waiter with the kitchen.

The state rooms of the after cabin, which is merely separated from the other by passage doors, are in no respect different, except in the numbers of berths from those we have just described. They range along each side of the deck, the central space being occupied with the machinery, to which several doors admit an entrance. These doors have a circular pane of glass to allow passengers to witness the working of the machinery. A barber shop is fitted up in the state room through which the shafts runs, the corresponding room on the opposite side being used as a store room. The saloon is larger and furnished perhaps in a more extensive style than the forward cabin, but the character of the furniture and fittings is precisely the same. This saloon is heated by a hot air apparatus, and ventilated by the same means as is the freight deck, except that here the ventilator is shut in by a stained glass frame. Hot and cold air can be supplied to any part of the vessel from the engine. The peculiar construction of the ship, and comparatively small room occupied by the machinery, afford an inner promenade round the whole course of the cabins, extending some five hundred feet. On the upper deck the space between the cabins and the side of the vessel is some twelve feet wide, extending also round the ship.

The ladies' boudoir in the after cabin is a handsome semi-circular apartment, furnished with great elegance, and richly carpeted. It is entered from the main saloon by two doors on opposide sides; round the bend of the room a sofa is arranged with a marble slab table in front of it. There are besides in the room several ottomas and luxurious arm chairs, covered with rich crimson plush, and the walls are ornamented with mirrors. There is also a neat library fitted up in the room, with mirror doors, the lower part of it being reserved for a medicine chest. The apartment is one of the most chaste and elegant we have ever seen assigned to the purpose of a ship.

From the main cabin there are four stairways to the upper deck. Here is the dining hall for the aft cabin passengers. This is a fine well lighted room, painted in imitation of oak, having mirrors and windows in each alternate section of panels. There are several book-cases in the room, which is also supplied with comfortable sofas. Leading from it forward, we come upon a small circular apartment, containing a glass case for the ship's plate, &c., and here, also, is the main pantry, a room for the storekeeper to issue wine, and a water-tank with filter capable of holding one hundred and five gallons. The remainder of this deck, forward, is occupied in kitchen, steward's rooms, officers' mess, &c.; and aft is a smoking room for the first cabin passengers, with a fine comfortable wheel-house, in which is a place for stowing ammunition, &c.

One of the greatest peccliarities in the fitting up of this ship is the absence of all angularities, and one cannot but admire the skill with which every available spot is adapted to the best use, while all arrangements are of the most regular kind. Nor in the attention to the comfort of the passengers has the comfort and well being of the sailors and firemen been overlooked; the forecastle is neatly fitted up with berths, water pipes, basons, mirrors, library, &c., and on the larboard side the like accommodations have been provided for the firemen.

Having arrived thus far in our gratifying inspection of the Ericsson, we were led to that portion assigned to the machinery. This part is characterized by the same neatness, and exhibits the same proofs of superior skill and management as are observable throughout every other part of it. Apart from the main principle, the distinguishing feature of the engines of the Ericcsson consist in dispensing with the centre shaft, whilst at the same time two pairs of working cylinders are employed, imparting a continuous rotary movement, as in the double marine steam engine. The arrangement by which Captain Ericsson attains this desirable uniform action presents one of the most elegant mechanical combinations ever produced. Each pair of working cylinders, with their appropriate supply cylinders, are placed parallel to the ship's centre line; one pair forward of, and the other aft the paddle shaft. The supply cylinders being inverted and placed at some distance above the working cylinders, with their open ends presented to the open ends of the working cylinders, a space is formed between the two, which contains a triangular lever for transmitting the verticle energy of the working pistons to the crank of the paddle shaft by a diagonal movement.—The mean angle of their diagonal being about forty-five degrees abaft the verticle plane of the paddle shaft in the aft engine, and forty-five degrees forward of that place in the forward engine, it is obvious that the forces of the two engines will be exerted nearly at right angles to each other. Hence the double cranks, and the objectionable centre shaft of the marine steam engine, are obviated, a single crank placed in the middle of the caloric ship serving to transmit, in a perfect manner, the continuous rotary motion required in turning paddle wheels for ocean purposes.

In further comparing the machinery of the Ericsson with the double marine steam-engine, it will be found that the four side levers have disappeared; the cross heads and cross tails likewise; nor are the four side rods to be found; and, above all, the absence of the parallel motion, with their nicely-adjusted joints, and levers for converting the curved movements into straight ones, claim attention. In place of all these parts will be found simply a triangular lever for each engine, with a link and connecting rod for transmitting the power of the pistons to the crank of the paddle shaft. Again, the four huge boilers of the ocean steamer give place to four small furnaces, erected under the working cylinders. Force-pumps, brine bump, safety-valves, &c., and the net working of connecting pipes, which fill the bottom of the ocean steamer, have disappeared; and in place of gauge-cocks, brine gauges, injunction-valves, &c. &c., calling for incessant vigilance on the part of many minds and hands at once, a single handle attached to the valve gear of the engines regulates at the will of a single mind the movements of a caloric ship. Starting, stopping, backing, and checking being effected by the single handle, without any regard to particular conditions, so essential in working the engines of the ocean steamer. The arrangement of the caloric ship being such that the required air for the engines from 50 to 70 tons weight per hour—has to pass through the fire rooms before entering the supply cylinders, it has been found in the Ericsson that the temperature is actually too low for the comfort of the firemen.

As an engineering achievement, the machinery of the Ericsson is very far ahead of any afloat. The engineer who beholds four open cylinders, each of 168 inches in diameter, with their pistons of upwards of twenty-two thousand supercial inches area, moving up and down in sight, through a space of six feet, can best appreciate the greatness of that achievement. To the ordinary observer, the movement of the whole machine is wonderful. And we cannot but feel extremely gratified that the caloric principle was introduced to the world on a scale so commensurate with its importance, and that our metropolis has the honor of initiating it.

PENNSYLVANIA MILITIA.

THE ADJUTANT GENERAL'S REPORT.

We publish below a part of the Official Report of Adjutant General JAMES KEENAN—to which reference was made in the Message of the Governor for all information regarding the Militia of the Commonwealth. The General takes especial pride in this department of the Government committed to his care. He feels confident that if his suggestions be carried out, and the proper legislation had, the military system of Pennsylvania may be made a model one, reflecting honor on the State, and providing her with a well trained, well armed citizen soldiery, the surest safeguard of peace, order and property, in times of threatened turbulence and peril.

Prior to the war with Mexico, the "Volunteers" of this State were, with few exceptions, well armed and equipped, but upon the departure of some of our most flourishing companies for the seat of war, their arms and equipments were thrown aside, and a new supply furnished them by the War Department. Other corps having suffered materially by the enlistment of some of their most efficient members in the United States Army, either disbanded or neglected their usual trainings, consequently their arms and equipments suffered so seriously from neglect as to render most of them unfit for service.

After the restoration of peace and the return of our volunteers, and especially after the passage of the act of 17th of April, 1849, a new impulse was given to the military spirit of the State, and not only did those companies of returned volunteers (with few exceptions) continue their existence as military bodies, but also those which had neglected their accustomed trainings and duties of the citizen soldier, resuscitated and refilled their ranks with alacrity. New corps also sprang into existence in all parts of the State, consequently the demand for arms suddenly became very great, and has since been rapidly increasing.

Each State is credited by the War Department with its annual quota of arms at terms of muskets. The number of muskets supposed to be due each year, is based upon the quota of the preceding year, subject to correction when the next return of the State militia is made, should the actual quota resulting therefrom require it. From a statement furnished me by the Ordnance Department at Washington, it appears that a balance was due the United States, by Pennsylvania, upon the 6th of September, 1851, of 1970 4-13 muskets.

The quota of this State, for the year 1852, by the return of the previous year, amounted to 1825 muskets; but from this the Ordnance Department deducted 145 to correct the apportionment of 1851, leaving a balance to be accredited to the State for this year, of 1680 muskets.—Of this quota I drew 850 muskets, with equipments, and the balance in cavalry, artillery, and rifle arms and accoutrements, in all equal to 1682 muskets. All of these have been distributed, and with the exception of a few rifles, the Arsenals of Pennsylvania contain no new arms of any description, and we are indebted to the United States 1827 muskets.

In view of this fact, and the probability of a refusal by the General Government to issue arms to this State for the year 1853, I have ordered the superintendents of the Arsenals to have cleaned and repaired, all the arms worthy of repair within their respective Arsenals. This is being done rapidly, and already nearly two thousand stand of arms have been rendered fit for service. These, however, are without accoutrements, and even were they accompanied by the necessary equipments, would be inadequate to supply the great and rapidly increasing demand. I would, therefore, respectfully suggest that an appropriation be made to purchase equipments for these repaired arms; and also to purchase for the State five thousand stand of arms and accoutrements.

[illegible] pendages, were purchased from the Secretary of War, at an average value of but a fraction over $2.13-100 per musket, or $2130 per thousand, and I presume that this State would be furnished with any necessary amount on similar terms.

Previous to the passage of the act revising the militia system, the tax paid by the Commonwealth for the support of the militia, averaged for some time the annual sum of twenty-five thousand dollars—since then, the annual military expenditure of the State has scarcely exceeded five thousand dollars—thus nearly twenty thousand dollars are annually saved the State by the existing system, and it would be but an act of justice to expend a portion of that sum for the benefit and encouragement of the uniformed militia. Pennsylvania, with the military spirit at present existing within her borders, and the experience brought home by her energetic young men from the camp, the bivouac, and the battle-field, has only to furnish her militia with arms and equipments, to render them at least as numerous and effective as those of any other State in the Union.

The militia law as revised by the act of the 17th of April, 1849, though immensely superior to the system previous to its revision, is nevertheless deficient in many particulars.

The annual return of the militia of the State by the Adjutant General, to the Adjutant General of the United States Army, is the basis upon which is drawn the arms and other military property for the State, but there is nothing in the "revised militia law," rendering it obligatory upon County Commissioners to furnish the Adjutant General with a list of delinquent militia men in each county. The result is, that but few such returns are made, and our quota of arms is drawn from the basis formed by the return of the uniformed militia alone; hence, the State suffers annually an immense loss of arms and military property. I would, therefore, respectfully suggest, that County Commissioners be required to make such returns annually, under the seals of their respective offices, to the Adjutant General of the State.

Moreover, by the neglect of some of the Brigade Inspectors, I am not in receipt of the returns exhibiting the number of uniformed militia in their brigades. As a remedy for this, I would propose that each County Treasurer be required to withhold a portion of the bill of the Brigade Inspector whose account he may settle, until presented with the acknowledgement of the Adjutant General of the receipt of such return.

The "revised militia" does not require a bond from the Brigade Inspector previous to his entrance upon his functions. I have, however, followed the precedent established by the late Adjutant General, and required of each newly elected Brigade Inspector the usual bond.

By the tenth section of the revised system, the Brigade Inspector is allowed "ten dollars for each company, fifteen dollars for each battallion, and twenty dollars for each regiment he shall have organized within the year. Provided, That should there be no organization in any brigade in any year, then and in that case, he should receive ten dollars per company for inspecting the first five companies, if there be five companies in his brigade."

The tendency of this section is to thwart organization.

The organization of one company in a brigade, would deprive the organizing officer of the pay allowed him inspecting the first five companies above mentioned; hence it is not likely that that officer would encourage any such organization. By doing so he would do injustice to himself, and by a refusal, he would do injustice to the "uniformed militia."

By the same section, the amount to be paid each Brigade Inspector is not allowed to exceed one hundred and fifty dollars per annum. I concur with my worthy and experienced predecessor, General Irwin, in recommending for that officer a fixed salary of two hundred dollars per annum, with an allowance for expenses incurred in public service, for upon his promptness and attention mainly depend the success of the existing military system; and the adoption of this course would be a sufficient remedy for most of the evils above enumerated.

The amount allowed for assessing delinquent militia men is likewise too small; hence, in many brigades, this assessment is almost entirely neglected. This requires an immediate correction, or without strict attention to and a faithful performance of the duties of that assessment, correct returns cannot be made wherefrom to draw our annual estimate of military property.

I would likewise recommend to the Legislature and your Excellency, the passage of an act allowing to the superintendents of the State Arsenals, in addition to their yearly salaries, a specified sum as a commutation for house rent, near their respective Arsenals as follows: to the superintendent at Philadelphia, the annual sum of two hundred dollars, and to the superintendents at Harrisburg and Meadville, the annual sum of one hundred each. This would be but just, for the reason that the salaries of these officers are too small for the duties required [illegible] should be near the property committed to their keeping.

I have visited and inspected the three State Arsenals, and take this opportunity of commending the fidelity and attention of the officers having them under their control. I have given orders for such repairs upon the Harrisburg and Meadville Arsenals, as I have deemed necessary. The Philadelphia Arsenal, however, I have not thought worthy of such attention. It is an insufficient building, insecure, badly situated, and pent up within so small a compass as to be almost unfit for the purposes for which it was intended.

I would recommend the sale of the lot on which it is situated, and the purchase of other grounds, whereon to erect an Arsenal, that in time of riot or insurrection might serve as a rendezvous and stronghold for the soldier, and in which military property might be secured from the hands of the lawless; an Arsenal worthy of the State, and not serving, (as has been truly said of the present building,) to humble the honest State pride of the Pennsylvanian.

I would make some suggestions concerning the office of the Adjutant General, such as the necessity of attaching to that office a clerk, in order to do justice to its immense correspondence; the propriety of referring all military affairs to that department alone, and likewise of requiring that officer to perform the duties of Inspector-General of the Commonwealth: but the necessity for these arrangements is so apparent, and the reasons so obvious, that it is not necessary to encumber this report with the details. However, I may say that the character and duties of the office of the Adjutant General of the State should bear a proper analogy to those of the Adjutant-General of the United States, and in this suggestion every gentleman familiar with military affairs will, I feel confident, concur.

For reasons not proper perhaps for me to conjecture, nor necessary to detail, our militia system has been subjected to opposition and neglect. It was a foundation of our fathers—an institution of the patriarchs of the Commonwealth, who thought there was wisdom in the saying, that "in peace is the time to prepare for war." We should ever remember that the lesson which this adage teaches is not adapted to the National Government alone—that the Republic is a Republic of confederated States, each one sovereign in all things, except those expressly ceded, as the terms and limitation of Union—that Pennsylvania can, when foreign invasion, domestic insurrection, or war declared, "to secure indemnity for the past and security for the future" demands, furnish as gallant a body of citizen soldiery as any State in the Union.

The functions of the State Government should not be exclusively directed to and expended in the civil department. Should the National Government call for troops, the call would be made upon the State, as such, for her quota, and Pennsylvania should hold herself ever ready, in all respects, to respond efficiently to such a call. State pride should find objects for its indulgence, not only in our agricultural and mineral wealth, our internal improvements, our common schools, and our admirable system of civil government, but also in our military organization, to which the appeal will at once be made, when foreign foes or intestine feuds shall threaten the security or endanger the peace of the country.