

THE CENTRAL SCREW STEAMER LE LOUVRE.

While the discussions are going on concerning Paris as a seaport, some interesting experiments are still being made on the subject of the ascent of the Seine by ocean vessels. Let us recall that, among the vessels that have been seen at Paris at intervals, are the Paris-Port de Mer, a small three-master built especially for ascending the river and which was wrecked upon the coast of Brazil; the Frigorifique, which arrived from La Plata in 1878, and remained for some time opposite the Trocadero and the Court of Justice; the Volage, a schooner yacht, which, in 1889, anchored in front of the Champ de Mars; and, more recently, the Givrigne, a three-masted vessel with auxiliary engine, that arrived at Paris from Canada with a cargo of salmon preserved in its cold storage hold.

A new ship has just cast anchor at the Louvre wharf—the steamer Louvre, built by Mr. Oriolle of Nantes. When loaded it sinks but 2.8 meters in the water, and is consequently capable of ascending the Seine with a full cargo. This quality is not the only one that makes a truly original ship of the Louvre; it is the first ocean vessel provided with two central propellers. As long ago as 1889, Mr. Oriolle built the Wilhelmine, a vessel actuated by an internal propeller. Since then he has delivered over a small river yacht with internal propeller and has converted a side wheel steamer, the Abeille No. 8, into a steamer with central propeller; but all these vessels were for river service only. The results that they gave were so satisfactory that Mr. Oriolle conceived the idea of applying his new system to an ocean vessel designed for coasting trade, and so the Louvre was constructed. This vessel is 53 meters in length and 8.5 in breadth. It gauges 500 tons. It is straight-stemmed, and is provided with two masts and one funnel, all three capable of being inclined in order to pass under the numerous bridges which cross the Seine between Paris and Rouen. As seen externally, it exhibits no notable peculiarity. The two engines are triple expansion. The respective diameters of their cylinders are 34, 62, and 90 centimeters, and each of them is capable of developing 350 horse power. The boilers, which are 2.6 meters in height by 1.8 meter in length, are multitubular generators composed essentially of two inclined steel plates connected by a number of parallel tubes.

The arrangement of the propellers constituting the true originality of this vessel, we shall describe at greater length. These two propellers are placed a little forward of the center of the vessel, that is to say, forward of the boilers and engines. Each revolves in a sort of tunnel having the form of an inverted U (\cap). These tunnels are 1.8 meter in height in the center, that is to say, at the place where the propeller is situated, and they are united by an inclined plane running lengthwise of the vessel. These propellers, which are 1.8 meter in diameter, and of 2 meters pitch, in revolving suck the water in front and force it aft.

As the tunnels are not closed at their lower part, the cavities that they form on each side of the center of the vessel increase the stability of it. The central propellers therefore have the advantage of putting the vessel in a state to remain at sea, which would behave very badly there (seeing the feeble draught that it possesses) were its propeller placed, as is usually the case, at the stern. The Louvre made its first trip in February. It took ten days to go from Nantes to Paris, in touching at Brest, Cherbourg and Havre. Its steadiness was perfect, at sea as well as upon the Seine, and the Parisian Steam Navigation Company, which had it constructed, has been using it since the 15th of February for the regular service between Paris and Nantes, in touching at Brest.

Including the Louvre, the maritime flotilla of Paris now comprises five ships, viz., the Emily and the Mabel, belonging to Burnett & Sons and running from Paris to London with a stop at Rouen; the Parisian and the Borey, belonging to the Parisian Steam Navigation Company, and running from Paris to Bayonne, with a stop at Havre and Rouen; and, finally, the Louvre.

It is only within a comparatively few years that ships have reached Paris. It is about thirty years ago that two steamers from London, the Jacques Paul and the Sophie, each gauging 150 tons, and which are now doing service between Nantes and Bordeaux, landed at the wharves of Paris for the first time. Then appeared at very irregular intervals the Echo, the

for Paris leather, paper, metals, chemical products and ox horns, all commodities of which they leave a part at Rouen.

The vessels of the Parisian Steam Navigation Company are of larger tonnage than the preceding. The Parisian and the Borey gauge 650 tons, and the Louvre 500, as we have above stated. The two first run, *via* Rouen and Havre, from Paris to Bayonne, where they deliver their cargo to the Spanish ships that coast along Spain and Portugal. As the outgoing and return trips consume from 28 to 30 days, each vessel makes one voyage per month. The installation of this service is of still more recent creation than that of the service from Paris to London. It has been in operation since the month of July, 1890, only. From Paris, the Parisian and the Borey carry away for Spain refined sugar, Parisian articles, various commodities, such as oils, soaps, etc., and *matériel* for factories.

Since they cannot obtain a draught of water greater than 2.8 meters in the Seine, they are unable to carry a load of more than 450 tons between Paris and Havre; or, if there is reason for it, they complete their cargo at the last-named place. On their return, they bring to Paris wines, resins, iron from the Adour forges, etc. During the year 1891 they took aboard or discharged 26,000 tons at Paris.

Last year, the maritime flotilla of Paris carried away or brought in 37,000 tons. This figure is very low if we compare it with that of the general tonnage upon the Seine, which was 4,514,035 in 1889, and 4,734,650 in 1890.

The rapid study that we have just made of the trade done by Paris with foreign countries by means of vessels that do not ascend the Seine, and that are capable of making sea voyages, ought naturally to be completed by an enumeration of the number of loaded boats, trains or rafts which, more modest, run only from Paris to Rouen or Havre.

During the year 1891, 265 boats brought from Havre to Paris 78,144 tons of merchandise, consisting of fuel, fertilizers, wood (2,469 tons), industrial products

(3,059 tons), agricultural products (63,320 tons), etc.; in 1890, Havre sent to Paris but 208 boats and 56,623 tons.

Last year, 1,160 boats or rafts brought from Rouen to Paris 428,333 tons of merchandise, sensibly the same as the amount taken to Havre; in 1890, Rouen sent to Paris only 1,326 boats and 325,318 tons. In 1891, Paris sent to Havre 80 boats or rafts, loaded with 11,605 tons (against 78 boats and 13,105 tons in 1890), and, to Rouen, 1,463 boats loaded with 77,464 tons (against 2,216 boats and 81,746 tons in 1890).

It is precisely the importance of this transit, effected by simple barges, between Rouen or Havre and Paris, that permits the adversaries of the project of making Paris a sea port to assert that there is no need of causing ships to ascend the Seine.—*Le Magasin Pittoresque*.

The New Chicago Tunnel.

The new 8 foot tunnel of the Chicago Water Works is now nearly completed. It extends out from the shore for a distance of four miles under Lake Michigan, and water is to be admitted at the extreme end. In this way it is expected a new supply of pure water will be obtained, in quantity about one hundred millions of gallons daily. The lake water near the shore is so contaminated with sewage as to be undesirable, if not actually dangerous. The intake of the present tunnel is $2\frac{1}{2}$ miles from the shore line, and it

is alleged the sewage is more or less mixed with this water. The large death rate from typhoid indicates either bad water or some other dangerous condition of things. The statistics show 1,400 deaths from typhoid per million of inhabitants in Chicago, against 140 in London, 220 in New York, 335 in Boston,

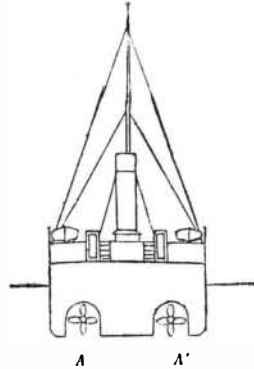


Fig. 3.—VERTICAL SECTION AMIDSHIPS.
A, A', central propellers.

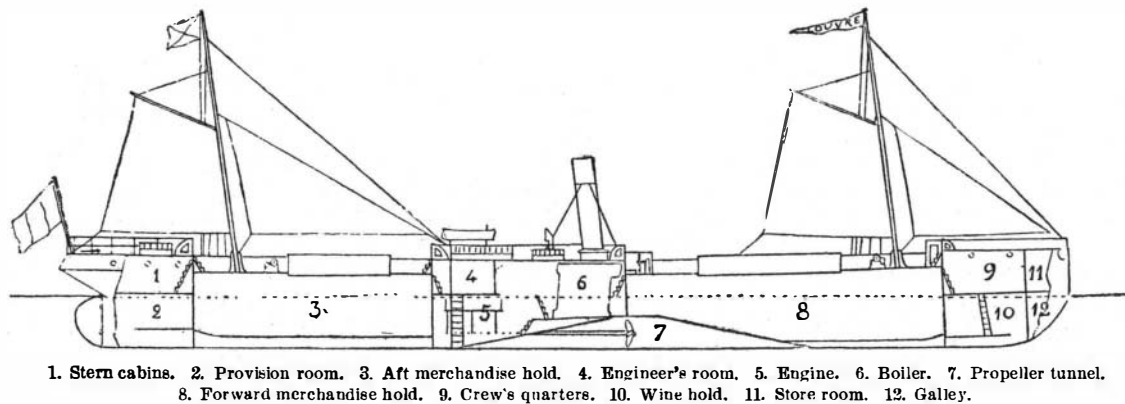


Fig. 2.—LONGITUDINAL SECTION OF LE LOUVRE.

Esther, the Arion, the Chloe and the Emily. Finally, eight years ago, a regular service was instituted, the Emily making two trips, going and coming, between Paris and London every month; and, since the Exposition of 1889, there has been adjoined to the Emily, which is a small vessel gauging but 140 tons, the Mabel, whose tonnage is 320. It takes from four to five days to make the trip between Paris and London. These two vessels do a large traffic, since in 1891

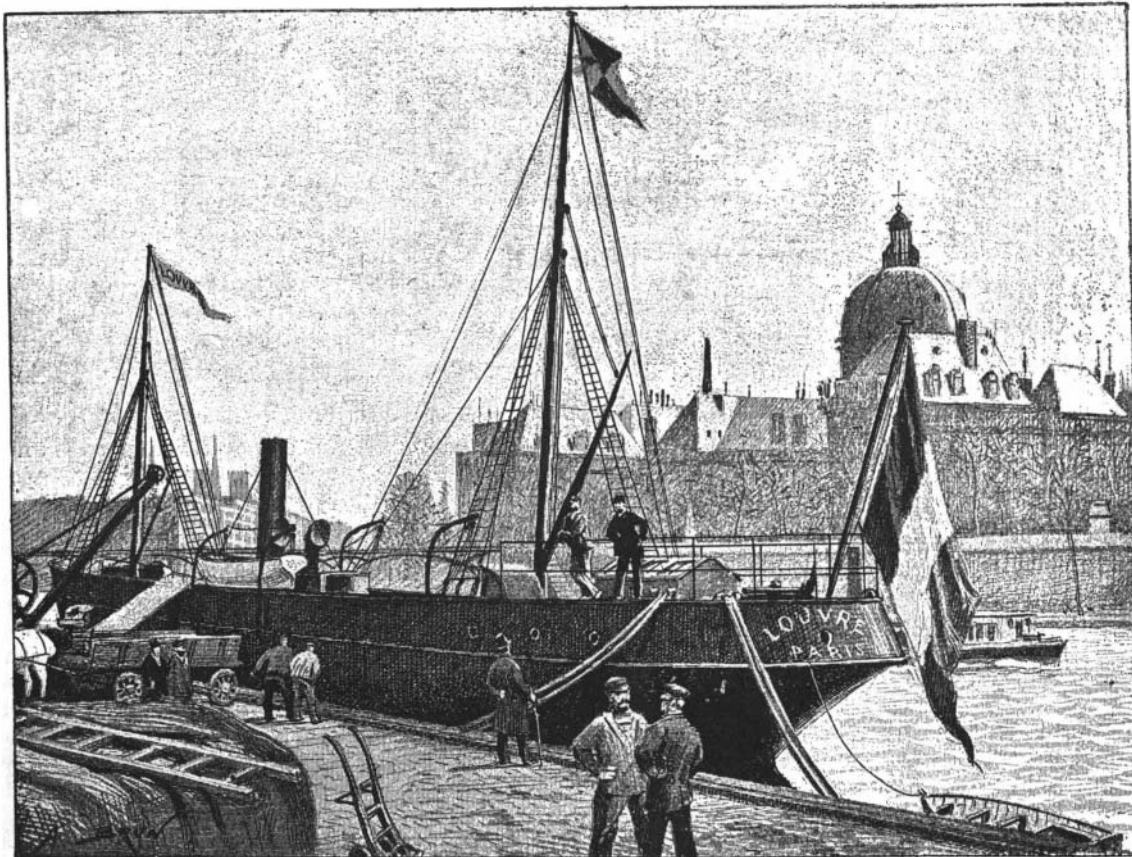


Fig. 1.—THE CENTRAL SCREW STEAMER LE LOUVRE.

they took on board or landed at Paris more than 11,000 tons.

They carry sugar, preserves and various commodities from Paris to London, and as they cannot descend the Seine with a full load, they complete their cargo at Rouen. At London, they take aboard