

AMERICAN RIVER STEAMERS.

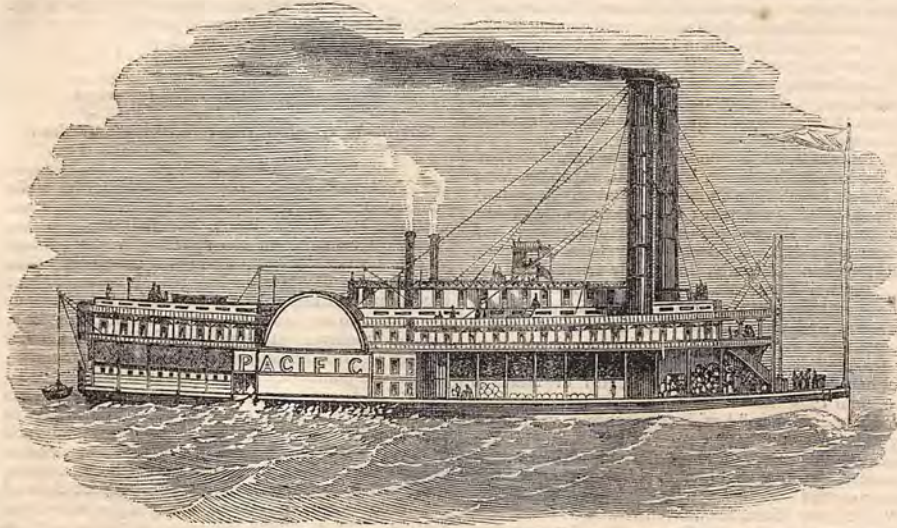
The river steamers of the United States are of a kind altogether distinct from anything which we understand by that name in Europe. Broad and majestic as many of the American rivers are, the fiercest gale scarcely affects their smooth surface, and consequently the boats which ply upon them may be built very light and slender, in comparison with sea-going vessels. They are, in fact, put together entirely for speed, and have a very small hull, although they tower above the water like floating

sengers in these boats are of the best description, and the fares very low. The passenger may travel 150 miles for about 2s. 2d., and have a separate bedroom for an equal sum. Indeed, so moderate are the charges, that it is not unusual for persons to take up a residence on board these boats for weeks during the hot season; their expenses, for first-class accommodation, provisions, and travelling at the rate of twenty miles an hour, costing about 10s. per day each person, or about the same as at an hotel on shore. The state or bedrooms are comfortably fitted up, and as large as are to be found

tive position of the crank and the connecting rod, the leverage diminishing in nearly the same proportion as the power of the piston diminishes. For this reason it has not usually been found practicable to cut off the steam at less than half-stroke. The great speed of these steamers is owing rather to the pressure of steam used in them than to the size of the cylinders. Many of the boats have cylinders about seventy-six inches in diameter and fifteen feet stroke. The boilers are capable of carrying steam from forty to fifty pounds pressure above the atmosphere. The wheels—forty-five feet in diameter—make sixteen revolutions a minute to attain a speed of about twenty miles an hour; the difference—five miles—giving the relative movement of the edge of the paddles through the water.

The steamers of the Mississippi and the other western rivers are worked with high-pressure steam without condensation; and the force, which in the eastern vessels is due to the vacuum, is obtained on these boats by a very great pressure of steam.

It is not unusual, when "racing" a rival boat, to raise the pressure of steam to 200 lbs. per square inch, and the ordinary pressure is about 150 lbs. The boilers are large and rudely constructed, and, when returning flues are made, so little space is left, that any variation of the water they contain or of the trim of the vessel, causes the upper flues to be uncovered. In this case they speedily become red hot; the iron, unable to resist the pressure, then gives way with a tremendous explosion, and the fine vessel too frequently becomes a complete wreck. The waters of the Mississippi and its tributaries hold in suspension great quantities of earthy matter, which gradually accumulates in the boiler, and being a non-conductor, prevents the heat of the furnace being absorbed by the water, so that the boiler-plates gradually become red hot. This danger might be avoided by blowing the water out of the boiler from time to time, but precautions of this kind are seldom taken. Notwithstanding the frequent occurrence of deplorable accidents, the navigation of these rivers continues to be conducted with strange disregard to human life. At the same time, it is worthy of remark that so frequent and violent are the thunder-storms in the United States, that usually a larger number of persons are annually killed by lightning than by steamboat explosions.



A MISSISSIPPI STEAMER.

palaces, and, in the case of the western steamers, frequently carry large cargoes.

The steamers which ply on the Mississippi and Ohio rivers and their tributaries, differ in some important points, as will presently be shown, from those of the Eastern or Atlantic States; although externally there is a general resemblance.

The engraving represents one of the finest of the Mississippi steamers. These vessels are built very sharp fore and aft. They draw very little water, 4½ feet being regarded as the maximum, even with vessels of 1,000 tons burden. An examination of the engraving will enable the reader to form a tolerably clear idea of the construction of these vessels. The lower deck is a huge platform or raft overlapping the hull many feet on each side. On this the saloons or cabins, offices, kitchens, bake-houses, barber's shop, drinking bar, bath-rooms, and all the appurtenances of a first-class hotel, together with the engines, fuel, and cargo, are placed. The steamers carry down the rivers large quantities of cotton and other produce, as well as passengers, to the port of New Orleans. On the deck next above, or what may be termed the second storey of these river palaces, is a saloon, or cabin, with rows of berths and state-rooms on either side. There is a separate saloon and berths for ladies, and in many steamboats there is a state-room especially appropriated to newly-married couples on their "wedding trip." The saloon, which is the general assembly-room and dining-room of the passengers, is not merely handsomely, but in many cases luxuriantly, decorated. The furniture is of the most costly and elaborate description, and the gilded walls are covered with mirrors. When, as is sometimes the case, the saloon extends the entire length of the vessel, the effect is very fine. The steam machinery rises a considerable height above the lower platform, and is inclosed in an oblong rectangular space. The highest deck, or rather storey, of this imposing edifice is occupied by state-rooms, and a space is also afforded for promenade. From this elevated position the steersman guides the vessel in her course, and communicates with the engineer, when necessary, by means of bells. These bells are of different tones, each one having a distinct meaning, answering to "Stop her," "Ease her," "Go a-head," &c. &c., which is immediately understood by the engineer, and the immense machinery is stopped or accelerated with surprising quickness in answer to the signal.

The arrangements for the accommodation of pas-

at some hotels, and the fare is luxurious. It must be confessed that we have no similar example of cheap travelling in Europe. The advantages we have described are not, however, without some drawbacks; for, while the comfort of the passengers is assiduously studied, their safety would appear to be the last consideration with the proprietors of these vessels.

The *Pacific*, which we have selected as an example of this class of vessels, is a fine boat, having capacity for the burden of 1,200 tons, and accommodation for 120 cabin passengers, with state-rooms. Her extreme length is nearly 300 feet, with 40 feet breadth of beam, and 8 feet depth of hold. The cabin is both rich and neat in style; the build semi-Gothic and Corinthian, with lofty skylights; and her arrangements for the convenience of the passengers are of the most complete description. There is usually only one engine placed in the centre of the deck, driving a crank placed in the axle of the paddle-wheels. The enormous size of these wheels, and the speed with which they revolve, enable them to perform the office of fly-wheels, and to carry the engine through its dead points with little inequality of motion.

We have already observed that the steamers which ply on the rivers of the Eastern or Atlantic States are worked on an entirely different principle from those on the great rivers of the west—the Mississippi and its tributaries. The eastern steamers are capable of running twenty-two miles an hour, and make eighteen miles an hour on the average—a speed which is scarcely exceeded by the steamers of the west, although the former pursue their journeys in safety, while with the latter great sacrifice of human life annually takes place from the bursting of boilers. The steamboat explosions of the United States have become painfully notorious, even in our own country; but these explosions are comparatively rare in the navigation of the eastern rivers. A brief account of the mode of working will explain the reason of the difference to which we have alluded.

The steamers of the Eastern States derive much of their efficiency from the application of the expansive principle, but this has been, to some extent, limited by the inequality of the action of the piston when urged by expanding steam on the crank. If the steam be cut off at less than half-stroke, the force of the piston is diminished before the termination of the stroke to less than one-half its original amount. The inequality is increased by the rela-

A FEW HINTS TO OUR FAIR READERS ABOUT TO MARRY.

In our last chapter we spoke of the misery endured by Agnes—a young lady about to marry—who suffered herself to be rendered miserable by jealousy, without having any excuse for this dreadful passion. Hers is not an uncommon case.

But we know too well that many young ladies are tormented almost beyond endurance by the fickleness of their suitors—of young men who not only disregard the sacred nature of an engagement, but care not how they wound a heart that is devoted to them.

What anguish and suspense poor Lucy M.—suffered from the inconstancy of one whom she had believed to be perfection! Lucy had a good fortune, and, as she was lovely, amiable, and sensible, she was a fortune in herself. Circumstances had thrown her and Adolphus a good deal together, and her affectionate heart soon reciprocated the love that he seemed to feel very deeply. He had suddenly to leave the town in which Lucy dwelt, and to go home to assist his father in the transaction of some business; but he determined to take the earliest opportunity of returning and asking Lucy's parents to consent to their union. Unluckily, Adolphus, on reaching home, found that his sister had a visitor, a former schoolfellow, staying with her. This schoolfellow was a very coquetish young lady indeed, and she determined that Adolphus should feel the power of her charms. Her task was not a difficult one, for Adolphus was by nature a rover; but he had no idea of giving up such a good match as Lucy. His sister's friend was of an exacting nature, and, as she required constant attention from Adolphus, his thoughts were much diverted from his first love, and from the kind of tacit engagement that existed; but he determined to go and propose for Lucy as soon as his present charmer was gone.

In the meantime, a mutual friend informed Lucy of the proceedings of her fickle swain. We need not say that she suffered a great deal. However, she determined to make her mother the *confidante* of all her sorrows. This was the best thing she could do. Just as she was a little comforted by her parent's wise counsel, she was roused by a well-known knock at the door. "It is too late now," said she. "A flirting, selfish man does not deserve