

country. It was the subject of a paper recently read before the National History Society of Regate, from which we cut the following:—"Although the sparrows levy a small contribution on the farmer's grain, yet the far greater portion of their food is from injurious insects, and the whole of the food they give to their young is from the tribe of insects. At the beginning of the world man would have succumbed in the unequal struggle if God had not given in the bird a powerful auxiliary—a faithful ally—who wonderfully accomplishes the task which man is incapable of performing—in fact against his enemies of the insect world man would be powerless without the bird."—*Moore's Rural New Yorker.*

#### 'Oil Region of Pennsylvania.

Appended to a report on the Oil Region of Pennsylvania, in the *Oil City Register*, of May 15, is the following recapitulation:

"Number of wells now flowing.....	75
Number of wells that formerly flowed and pumped .....	62
Number of wells sunk and commenced .....	358
<b>Total .....</b>	<b>495</b>
Amount of oil shipped.....	1,000,000 bbls,
Amount on hand to date.....	92,450 bbls.
Present amount of daily flow .....	5,717 bbls.
Average value of oil at \$1 per barrel.....	\$1,092,000 00
Average cost of wells \$1,000 each ...	495,000 00
Machinery, buildings &c., from \$500 to \$7,000 each.....	500,000 00
Total number of refineries .....	25."

#### The Iron-Plated Navy of France.

The *Revue Contemporaine* states that the plan of the first iron-plated frigates was signed March 20th, 1858, long before the matter was approached by England or any other country. There are now four of these frigates afloat, the *Gloire*, the *Invincible*, the *Normandie*, and the *Couronne*, all of which have been tested at sea, with the most satisfactory result. Each of these has an armament of thirty-six rifled guns, of which thirty-four are in the battery, which is plated with iron from end to end. Two guns only are placed on the upper deck and will carry four miles. The crew is composed of 570 men, the engines are 900 horse power, and the length of the ships is 231ft. Besides these there are four iron-plated batteries, intended not for sea but for harbour defences; they are the *Peiho* the *Saigon* the *Paixhans* and the *Palestro*; these are not yet quite complete. Two more iron-plated frigates, on a plan different to the *Gloire* are building, the *Magenta*, and *Solferino*. Besides these there are ten other frigates of 1000 horse power building in the Imperial dockyards, and six new floating batteries have been ordered by private builders, and are being pressed on with all haste. The iron fleet of France thus consists of 16 frigates, afloat or nearly completed, and ten floating batteries.

#### Copper Cole's Cupola Principle.

Arrangements are nearly completed at Her Majesty's dockyard at Sheerness, for the construction of a new iron-cased steamer, to be built on Coles's cupola principle, with two shields. The dimensions

of the vessel are as follows:—length between perpendiculars, 185ft.; length of keel for tonnage, 148 ft.; extreme breadth, 42ft.; breadth moulded, 41ft. 9in.; depth in hold, 19ft. 10in.; and burden in tons, 1385. She will draw about 16ft. of water forward, and 17ft. aft. Her stem will be constructed somewhat after the pattern of the *Defence* and the *Resistance* iron-cased frigates. What has been chiefly kept in view in the design of the vessel, is to combine great speed with great power of resistance.

#### Foreign English.

The following choice specimen of English composition is daily distributed in the Western Annex of the International Exhibition. "Balthasar Danzer, manufacturer of Bellows a Munic, recomends his theuv-pre-du-cing apparatus made for the irrigation of tender plants and calculated fr destroying plant lice. Price L4. s. 15. His second apparatus intended for domestic use serves for the pur pose of destroying bugs batles cock reaches and all other noisome chafers in house a Kitchens Pr: 6s. 6d."

#### Cohesive Strength of Metals, &c.

Cast iron, 42,000 pounds; iron bar (best Swedish and Russian), 81,000 pounds; ordinary 68,000 pounds. Steel bar, soft, 120,000; razor tempered steel, 150,000 pounds. In steel, and willow wood, the *cohesive and repulsive* strength appear to be nearly equal. Oak will suspend much more than fir; but fir will support twice as much as oak, probably on account of the curvature of the fibres of oak. Although iron, at an average, is four times as strong as oak, and  $5\frac{1}{2}$  times as strong as deal or fir, yet it is more liable to accidental imperfections; and when it fails it gives no warning of its approaching fracture. Wood, when it is crippled, complains, or emits a sound, and after this, although it is much weakened it may still retain strength to be of service.—J.B.

#### Microscopic Writing.

Amongst the mechanical marvels of the Exhibition is a machine exhibited by Mr. Peters for microscopic writing, which is infinitely more wonderful than Mr. Whitworth's machine for measuring the millionth of an inch, which excited such astonishment in 1851. With this machine of Mr. Peters', it is stated that the words "Matthew Marshall, Bank of England," can be written in the two-and-a-half millionth of an inch in length, and it is actually said that calculations made on this data show that the whole Bible can be written *twenty-two times* in the space of a square inch.

#### Substitute for Cotton.

THE CONSERVA PLANT.—It is met with in every ditch and pool, especially in old clay pits, and in most slow streams. It is of a soft substance, and in pure water, where the threads grow long, resembling tow. But in muddy waters, where they are short, it is not unlike cotton; which being carefully collected and dried, turns whitish, and has sometimes been used for it, either as wadding, or to make towels and napkins, for stuffing beds, and for making paper. In every country there is a great annual waste of cotton used in wicks for candles and lamps, and, in order to economise cotton for the future, I strongly commend this plant, as a substitute, to the parties most interested.