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(Illustrated articles are marked with an asterisk.)

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Price 10 cents. For sale by all newsdealers.

Table listing contents of the supplement, including 'I. AGRICULTURE.—Spraying for the Prevention of Plant Diseases', 'II. ASTRONOMY.—Variable Latitude', 'III. BIOGRAPHY.—Oscar Wilde', etc.

STEADYING VESSELS AT SEA.

At the recent meeting of the Institute of Naval Architects, in London, Mr. J. I. Thornycroft read a paper on the steadying of vessels at sea. He gave an account of some experiments recently made on the yacht Cecile. The vessel was provided with a shifting weight which was arranged under the floor of the cabin and connected with a pendulum and a hydraulic apparatus, in such a manner that when the vessel rolled, the weight was shifted so as to counteract the rise of the vessel.

The use of shifting weights for the trimming of vessels is in common use in this country, and has been for many years. It is chiefly employed on our river and sound steamers. In some cases the weight is shifted by mechanism, but a more common method is to make use of boxes containing iron weights, such as chain cables. The boxes are mounted on wheels, and when the boat begins to roll, the seamen, on signal from the pilot, move the weight as required to bring the boat back to even keel.

Quite a number of patents have been granted in this country for self-acting ballast-shifting devices, with pendulums to trim or prevent vessels from rolling. Among the earliest of these patents was that of Purse and Staley, number 1,460, granted in 1839—more than half a century ago. In this invention a weighted pendulum was used, which, by swinging when the vessel rolled, set gearing into motion that instantly moved a heavy weight athwart the vessel so as to counteract the rolling. This apparatus was arranged below decks and motive power from the main engine or from a special engine operated the mechanism.

Mr. Thornycroft is of the opinion that a contrivance on the principle described might be advantageously applied to sea-going vessels. The success of his recent experiment and the long use of analogous apparatus in this country support his views. The application of anti-rolling devices to Atlantic passenger steamers certainly would render the sea passage much more comfortable than it often is at the present time.

CALIFORNIA WINES.

An excellent quality of table wine, red or white, can be had of the wholesale dealers in California for from 50 to 60 cents per gallon. Each gallon fills from five to six bottles, making the cost to the vender but about ten cents a bottle, although he sells it at from 50 to 60 cents a bottle to the consumer. Very little native wine goes to the saloons, because the demand is small, the patrons usually preferring beer or stronger liquors. The hotels and restaurants are the channels through which the wines chiefly go to the tables, and the reason why there is not greater use of native wines is on account of the exorbitant prices charged, under the guise of foreign labels. A correspondent says he has seen casks of as fine claret as the world can produce made in Los Angeles; but the wine merchant sorrowfully said, "Every bottle of that splendid wine will be sold in New York under French labels."

The result of such frauds is not merely to impose on the purchaser, but also to diminish the inducement to make really choice native wines, because there is no market for them as such.

Large cargoes of California wines go abroad, to be reshipped to this country as foreign goods. The French manipulate them, put in a fancy bouquet, and sell them back to us at an enormous profit. Patriotism should lead us to patronize our own productions, which with a fair degree of caution we may know to be pure and wholesome.

The question is asked, however, if California wines are not adulterated. It is asked in reply, what they can be adulterated with that is cheaper than \$10 a ton—the price of the native grapes to the manufacturer. There is no question about imitations and frauds; but this is not done in California, for the simple reason that honesty is cheaper there.

Electrical Ribbon Machines.

The City Council of St. Etienne have resolved to apply electric motive power to all the hand looms in the city, and contracts have been made with an electric company for the necessary plant and currents. The electric dynamos are to be driven by water from the city reservoirs. There is practically an unlimited supply of water in the reservoirs, with a fall of upward of 100 feet. To grasp the importance and far-reaching results of this innovation, it is necessary to understand that the bulk of the enormous output of ribbons (\$22,000,000 a year) is the product of house industry. The weavers for the most part own their own looms, and operate them by hand in their own houses. There are 18,000 looms which are thus distributed among the homes of the weavers, while the number of looms driven by steam in the few ribbon factories of the town is only 5,000. The 18,000 looms of the independent weavers are valued in the aggregate at \$4,500,000. What the city of St. Etienne proposes to do is to convert each one of the 18,000 hand looms into a power

loom driven by electricity, the innovation being coupled with the adoption of electric light. The result of this change from slow, laborious, uncertain hand power to the swift, regular, unflinching power furnished by electric motors will be an increase in the productive capacities of the looms and a considerable reduction in the general expenses of fabrication. In other words, art will be wedded to modern machinery. The weavers of St. Etienne have always been the most artistic ribbon makers in the world, but they have enjoyed few mechanical advantages. Now the old order of things is to be changed, and the products of the St. Etienne ribbon looms, which have been a trifle more costly than similar products in some other countries, notably in Switzerland, will be turned out at the lowest possible prices. The weavers employed in the ribbon trade number 70,000.

Origin of the Term "Grippe."

La Medecine Moderne gives an extract from a meteorological journal kept at Versailles in the eighteenth century, and in which the meteorological variations are carefully noted day by day, with a few reflections upon remarkable atmospheric occurrences—storms, hail, thaw, etc.

Commenting upon the months of February and March, 1743, the journal says, "There was a prevalence of colds and inflammations of the chest at Versailles and Paris. The king named this malady 'la grippe.' It was observed that bleeding was wholly contra-indicated. Such persons as had not been bled, and who drank much, were the most quickly cured."

It results, then, from this document, that it was King Louis XV. who gave the name of grippe to the influenza that then prevailed under a meteorological state, as the journal shows, analogous to that of recent years and of the present year.

Wooden Pavements in Paris.

In an article on wood pavement in Paris, contributed to the Revue Pratique des Travaux Publics by Mr. Brown Vibert, the author remarks that, to insure durability, this class of pavement must be laid with considerable care. The concrete foundation should be 6 in. thick, and made with 300 lb. to 440 lb. of Portland cement to a mixture of 9 cubic feet of sand and 27 cubic feet of gravel. As soon as it has set, the concrete should be covered with a 1/2 in. layer of mortar consisting of 660 lb. of Portland cement to every 35 cubic feet of sand, and left to harden two or three days. The blocks should then be set in rows separated from each other by a space 3/8 in. wide. These cracks are filled with cement mortar, and a layer of broken porphyritic stone 1 1/2 in. thick spread over the pavement. This layer is soon driven into the wood by the action of the wheels. Provision must be made for the expansion of the wood, and for this reason in wide roadways a space about 2 in. wide is left open along the sidewalk and afterward filled with sand. In a roadway 131 ft. wide an expansion of no less than 16 in. was observed to take place in fifteen days, the blocks being very dry. In Paris these blocks are 6 in. high, 3 in. thick, and 8 1/2 in. long. The cost as laid is about 9s. 6d. per square yard for Landes pine and 14s. 3d. per square yard for northern spruce blocks. The duration is said to be about seven or eight years under heavy traffic and about fifteen under moderate.

The Best Stone for Roads.

In a paper read before the Boston Society of Civil Engineers, Mr. W. E. McClintock remarks that the specific gravity of a rock is no indication whatever of its fitness for road metal. Thus slate weighs 175 lb. per cubic foot and pure mica about 183 lb., but no one would think of using either of these for road metal. The best material for this purpose was, he considered, trap rock, after which he would place felsite, and then came granite. As regards the latter, however, it differs in quality, that containing hornblende being preferable to those with mica. The latter was soft and should not be used unless it was very difficult to get better material. In cases where the traffic is light and the stones previously mentioned difficult to procure, sandstone may be economically used for metal, in spite of its inferior wearing powers. Of two sandstones, he held that the coarser-grained was to be preferred. Gneiss he held to be of about the same value as a good sandstone.

Use of Carrier Pigeons at Sea.

According to the Revue Maritime et Coloniale, some important experiments have been recently made at Portsmouth relative to the use of carrier pigeons at sea. A depot of these birds having been established at the Eastney barracks, some of the pigeons belonging thereto were taken to sea by a torpedo boat, from which they were set free in series at a distance nearly equal to that of the coast of France. These birds almost invariably returned to their home, and on one occasion there was a thick fog on the other side of the channel; the pigeons set free circled for a few minutes around the boat, and then, getting their bearing, returned to Eastney without delay.