The Laying of the Atlantic Telegraph.

The following from the London *Daily News* gives some information with regard to the precautions which are now being taken on both the *Agamemnon* and *Niagara*, in laying the great telegraph cable:—

The outer coating of the greater part of the cable consists of a coil of eighteen strands of even-thread iron wire, as a protection to the gutta percha core containing the telegraph wires, from friction or other injury until it has been safely deposited on the bed of the deep Atlantic. But those portions of the cable which will have to be joined when the vessels part company may possibly be subjected to an extra strain as the first unbroken link of it sinks between the sterns of the two vessels to find its ultimate resting place; and to meet this possible contingency, ten miles' length of this central portion of the cable has been protected with a sheath of 18 steel, (instead of iron) wires, and is supposed to be capable of sustaining a strain of twelve tuns. The machinery made by Messrs. De Bergue and Co. includes paying-out sheaves or drums of five feet in diameter, having grooves corresponding to the thickness of the cable, with a friction drum attached to them revolving three times as fast as they do, and with breakage power to check or retard the motion of the sheaves at pleasure. From the hold of each ship the cable, passing over four of these sheaves to a few feet above the poop deck, will be dropped into the sea over a fifth sheave, placed above the stern. The exact amount of strain will be constantly indicated by an instrument for the purpose under the eye of the breaksman. At the sides of the vessel will hang down into the water new electrical logs, principally due to the ingenuity of Mr. Charles Bright, the Atlantic Company's chief engineer. These immersed logs have vanes and wheels revolving at a rate proportioned to the passage of the ship through the water, and making an electric circuit which is broken at each revolution. An electric wire, from the log to the deck, records there every revolution of the log, and consequently the exact speed of the ship. It must not be supposed when the ships part company that communication will be lost between those on board the vessels. The electricians have hold of either extremity of the coils of the cable, and will interchange signals constantly, so that each vessel will be aware of the other's fate, and of every incident that may help or retard the progress of submersion, unless some unfortunate emergency should snap the link. When the topmasts of the ships have sunk beneath the horizon, and they are lost to view by the look-out-men, the inter-oceanic current of electricity will give instant record of all that passes, until the lengthening line of cable has been spun out from shore to shore. A bell on board each vessel will sound every second, as each portion of the cable is paid out; and its silence will probably be the first indication of any mishap arising from friction or over-tension of the cable. The vessels will have apparatus on board, so that in any such emergencies they can be backed, the cable recoiled until the faulty place is found, when a piece will be cut out and the perfect portions re-united with as little delay as possible. In case of a storm, apparatus has been provided to allow for any extraordinary strain that may occur, and, if necessary, for cutting the cable without letting the outer end of it slip to the bottom of the ocean, whence it might never be recovered. In such an emergency there are large reels of auxiliary cable of great strength, which could be attached to the end; and these auxiliary cables can be suspended from huge float-shaped buoys on the surface of the water, capable of resisting a very considerable strain till all danger has passed.

Changes in the Size of Vessels.

Thirty years ago, remarks a late writer in the Boston *Traveler*, there were very few merchant ships of one thousand tuns register, except the ships of the East India Company. These were magnificent vessels, of about 1,500 tuns, organized in their discipline somewhat by the rules of the Navy. They were very strongly built, of the best materials, mounted guns upon two decks, and carried crews of one hundred and fifty men, but being full modeled, were not fleet sailers. After the East India Company's mercantile monopoly expired, other vessels, varying from 700 to 1,000 tuns, termed "free traders," took their place in the trade of the East. But as the rates of freight diminished, British ship-owners increased the size of their vessels, arguing correctly that a ship of 2,000 tuns could be built and sailed at less cost than two vessels of 1,000 tuns each, and consequently could better afford to take cargoes at the reduced rates of freight.

The enormous expense of building ships in England, induced ship-owners to turn their attention to British North America, where vessels could be built at half the cost required in England, and a competition arose which was the origin of cheap shipping, both here and in England. The great size, and cheap materials and fastenings of American vessels enabled our ship-owners to compete successfully, for a long time, with English vessels, both at home and abroad.

When the California trade opened, ships, such as the world had never seen before, were produced. Their vast size—many of them over 2,000 tuns register—their beauty and matchless speed, gave them the monopoly of the trade, West and East. The English ship-owners were alarmed, and purchased many of our best ships and modeled after them, but built their vessels smaller than those they purchased. Trade became dull, and vessels of moderate capacity with good sailing qualities, obtained freights, while their larger rivals, owing to the time required to load them, remained idle. Our ship-owners generally have now ceased building very large vessels. Vessels of 700 tuns are better adapted to the state of trade than those of larger capacity.

The days of extreme clippers are numbered. When, adds the same writer, those beautiful vessels which were built for the California trade have passed away, their places will probably never be supplied by others like them. Any man who should now propose to build an extreme clipper, would be considered insane.

Although the ships which are now being built are of nearly the same class as those which were built ten years ago, yet the various changes of the past have been productive of many improvements in modeling, construction, rigging and equipments.

Natural Bridges.

When a great body of water has accumulated in a lake until it overflows its barriers, the dam, if narrow and soft, is rapidly washed away, and the subsequent traveler finds but a quiet river flowing through a "notch" in a chain of mountains. Effects somewhat analogous are produced by the flowing of quiet rivers through a soft alluvial country of uniform level, where, as is the case with much of the country in the Rocky Mountain region, the streams are sunk several hundred feet below the level of the general surface. But when, in either configuration of country, the upper surface is of a harder material than the base, it is possible for the water to force a passage beneath, and leave the rocks above. There have doubtless been great numbers of such temporarily formed, and small ones exist at this day without attracting particular attention. The one over Cedar Creek, in Virginia, which is described in all the geographies, as quite a place of resort, is of great hight, and is made available as a means of carrying one of the common roads of the country across the stream; but it seems destined to lose its laurels, in consequence of the attention which, by a recent survey for a railroad, has been attracted to another, which is both higher and wider and also used in the same way.

The Abingdon *Virginian* describes Natural Bridge No. 2, which lies in Scott county, that State, as one compared with which the bridge over Cedar Creek is a mere trifle. The Scott bridge extends across a chasm more than twice 80 feet in width, and is 420 feet deep. We think this is higher than any artificial bridge in the world, if we except the ancient aqueduct of Spoletto in Italy, which is the same hight. At the bottom of this gulf flows a larger and more rapid stream than Cedar Creek. The arch of the Scott bridge, the *Virginian* remarks, is not so perfectly formed as that of Cedar Creek, but is not less a bridge, with a broad wagon road located upon it. A recent survey for the Cumberland Gap Railroad passed through the arch of this bridge, and thus brought it into notice. It is described as the wildest and most stupendous curiosity in the United States, and yet it is comparatively unknown.

Live Fences—Osage Orange.

In the August number of the Wisconsin *Farmer*, its editor affirms that his faith in the Osage orange as a shrub suitable for hedges in a tolerably cold climate has been fully dissipated by the last few years observation and experience. For almost two years he has constantly, but unsuccessfully, inquired for the first person who was meeting with any substantial success in the growth of the Osage orange, north of Chicago. Hence he concludes that the thousands of experiments that he knows have been tried, must generally, if not invariably, have proved failures. He believes that this long cherished article must be abandoned throughout the whole of the great and fertile Northwest, and that people must look about them for something better, or abandon the whole subject of live fences, and make up their minds to fully rely upon dead timber, a material which must long, if not always, be very scarce in many localities, and at best expensive and transient in duration. But he recommends a thorough trial of numbers of our more northern shrubs, and fast growing trees. Observant men throughout the Northwest who have opportunity, taste and leisure, should institute a series of experiments with the native thorns, and dwarf or crab-apple trees or wild plum, with the honey locust, or whatever else in their judgment promises best, not forgetting the hawthorn, both American and English, to which we invited attention a few weeks since. Let the State and county agricultural societies offer adequate premiums for actual success in these important experiments.

A course of this kind pursued steadfastly and thoroughly by one hundred experimentalists for four consecutive years, would probably result in triumphant success with more than one of the shrubs mentioned. The object is well worthy of a trial in an earnest manner.

The editor of the American *Agriculturist*, in recent travels West, paid particular attion to this shrub, and reports that of forty-seven hedges examined, twenty-three were badly injured by frost, seven were considerably injured, and four slightly so. Of the thirteen uninjured, seven were sheltered by hillsides, groves, or by snow banks produced by adjacent fences. This looks rather unfavorable to its general use.

Indian Corn.

Maize, or Indian Corn, originated in America, and is not yet, we think, cultivated to any extent on the European continent. Though the people of Great Britain cannot be made to appreciate its merits very fully, the aggregate exports of corn in 1856, in the form of whole grain, meal, corn starch, farina, etc., amounted to between seven and eight million dollars, or about one-fortieth of the whole exports of the country, and 6,700,000 bushels, considerably more than half, went to England alone.

Corn has always been an important article in this country, both of consumption and export. The total amount of this produce exported in 1770 was 578,349 bushels; in 1791, 2,064,936 bushels, of which 351,695 were Indian meal. The value of corn and its manufactures exported from the United States in 1830, was $597,119; in 1835, $1,217,665; in 1840, $1,043.516; in 1845, $1,053,293; in 1850, $4,652,804. The export increases more rapidly than the production. The export of corn quadrupled between 1840 and 1850, while the production did not quite double.

The great amount of invention bestowed on corn planters, corn cutters, shellers, cob grinders, etc., tends each year to promote the increase of production. It has been estimated that, as a general rule, seven pounds of corn will produce one pound of pork; so that in localities where through distance from market or from transportation facilities, the cereal cannot be raised at a profit for sale, it is frequently the material used in fattening the more concentrated form of diet, and on which, consequently, the freight is less. Cob meal we believe, is most valuable for animals that chew the cud; horses and hogs, as a general thing, deriving less benefit from the cob-grinding inventions. With all animals, however, we believe, there is a perceptible advantage realized by mixing the cob with the denser meal.

Concentrated Milk.

Gail Borden Jr's patent process for concentrating and preserving milk has recently been put in successful operation in Burrville, Litchfield Co., Conn., and milk reduced to about two ninths its original volume is now sold in our city at about 32 cents per quart. It is becoming quite popular on steamships, and may be recommended to all who are sensitive on the subject of swill-fed milk in cities. Its taste is that of ordinary scalded milk, and the process of preparation consists in keeping it from the air and concentrating it as rapidly as possible by boiling *in vacuo* at a temperature of less than 130° Fah. In using it, water is simply poured in until the fluid is restored to its former condition. From personal experience we can recommend it as a better article for family use than most of the milk sold in this country, and equal to the best. Under ordinary conditions this milk willkeep a little longer than common milk, but thereare two ways in which it can be preserved for months and probably for years. It may be hermetically sealed in cans, or may be combined in due proportion with pulverized sugar, the sugar being less than required by ordinary tastes as sweetening for tea or coffee. A third method, that of surrounding it with ice, will preserve it for several weeks. There is a prejudice against *manufactured* milk, but this article is simply pure country milk recuced in bulk by the loss of some 75 or 80 per cent of its water. We can vouch for the integrity of Mr. Borden, having known him for many years.

Arctic Explorations this Season.

A few weeks ago, in treating on the subject of Explorations in the Arctic Regions, we alluded to the fact that a small expedition, one vessel only, had sailed this season from England, to give a final search for traces of Sir John Franklin; but we inadvertently neglected to notice the intended expedition of Dr. Rae from Canada, to define the yet undetermined points on the northern coast of our continent. The name of the vessel intended for this duty is the *Iceberg*, a brigantine of about 100 tuns. She was launched a few weeks since at Montreal, nearly ready for sea. The season being too far advanced to enter upon her proper mission, we learn that she will be engaged in freighting till Fall when Dr. Rae will take her to England, and be prepared next spring to carry her into the Polar Sea.

The Tehuantepec Route.

Late accounts from Tehuantepec announce that the road across this isthmus is rapidly progressing. Col. Summers and party, from New Orleans, had arrived with saw mills and a pile-driver, and were actively engaged in driving piles, and laying the foundations of the bridges. When the pile-driver was put in operation it created quite an excitement among the natives, they never having seen anything of the kind. The greater portion of the timber for the bridges is already cut and on the road, ready for use. The road, having paid all previous claims, is out of debt, and the friends of the enterprise may look for its early completion. The contractors can command any amount of native labor at thirty-seven cents per day.

The new Houses of Parliament in London have been in progress nearly twenty years. They cover more than eight acres of ground, and contain 1,180 rooms, 10 halls, 126 staircases, and more than two miles of corridors, passages, &c.