quent. The plains of Southern Russia, or of the Red River in Canada, with a comparatively rigorous climate, far excel Ireland as wheat-producing countries, because their short summer is one of uninterrupted fierce sunshine; their vegetation suffers no check; the grain is ripened all at once, and the harvest gathered without delay or difficulty. The deficiency of ripening power in the Irish climate produces a secondary defect, which meets with less attention than it deserves. The grain which lingers on the stem two or three months before it hardens is sure to be unequally ripened; some of it is immature, while more is tending to decay. Consequently, it is bad seed, and the Irish farmer habitually sows perhaps six or eight times as much as Mr. Mechi would deem requisite. Under these circumstances, it is evident that the Irish farmer ought to cultivate cereals no further than is requisite for the economy of his farm, and to look to other productions for his profit. Fortunately, there is a husbandry for the pursuit of which he enjoys peculiar advantages. In green crops no country can compete with Ireland, where, nevertheless, they are still little known or esteemed by the multitude. From this it may be inferred that sheep and cattle ought to be the chief objects of Irish husbandry. In truth, the Green Isle, under proper management, could easily supply England with beef, mutton, poultry, milk, and butter, and grow rich by giving abundance at a cheap rate to her neighbours. But then this could be effected only under a system of large farms. The grazier and cattle dealer, to make their business profitable, must do it on a large scale. Butter of the best quality cannot come from a small dairy. The improvement of Ireland, therefore, as dictated by climate and natural capability, can be effected only under a system of large farms. The popular wish, however, is for small holdings. It is thought that the country, when divided into potato gardens and all covered with cottages, will be a paradise. But this poor man's paradise, beginning with a few years of felicity, will assuredly lead to the pauperism of ages. The Legislature cannot countenance schemes opposed to the wholesome development of society, and which would make poverty an institution; neither can it prevent their diffusion; but it may counteract them by spreading enlightenment and by presenting plain truths to the common sense of the community. This might be done by the publication of some statistics, showing the relative amount of cost and production of wheat and of green crops in England and Ireland, with some illustrations of the gain derivable from large farms and the use of machinery. W. D. C.

THE STONE AGE IN EGYPT

AT a recent meeting of the French Academy, two communications were read relative to the discovery of relics presumably belonging to the Stone Age in Egypt. The one of these was merely a claim on the part of M. Arcelin to priority in the discovery of various localities abounding in such remains. The other, by Messrs. Hamy and Lenormant, while according priority in the discovery to M. Arcelin, gives a list of the various spots at present known in Egypt on which the manufacture of flint implements was carried on in early times—or where *ateliers de fabrication* have been discovered. For the benefit of our countrymen travelling in Egypt, we here reproduce the list, arranged in the order in which the places occur in travelling southwards.

1. SAQQARAH, where have been found "scrapers" and other worked flints.

2. NEG-SALMANI, a small *atelier* in the desert, at some distance from the Libyan chain, and to the north of the ruins of Abydos. Flakes of whitish flint have been observed here.

3. HARABAT-EL-MADFOUNEH, another small *atelier* to the west of the great temple of Seti I., at the foot of the mountain. The worked flints, principally flakes, are of a fine texture, and pink in colour.

4. BAB-EL-MOLOUK, at the entry of the Valley of the Tombs. M. Arcelin here found flakes, "scrapers," &c.

5. GEBEL-QOURNAH. Here are traces of the manufacture on a large scale of worked flints of various types. Among these are said to be "lance-heads" of a curious character, like some of those from the Valley of the Somme, and the Cave of Le Moustier, arrowheads, knives with or without a shoulder, "scrapers," hammer-stones, and nuclei, not unlike those of Pressigny. The flint is brown or blackish, and fine in texture.

6. DEIR-EL-BAHARI, and 7, DEIR-EL-MEDINEH, at the foot of the mountain of Thebes. Nuclei and flakes, like those of Gebel-Qournah, are found here occasionally, and it is suggested may have come from some unexplored locality on the summit.

8. EL-KAB, where, at the foot of the cliff, flakes, arrowheads, and other forms have been found.

Besides these localities, where worked flints occur on the surface of the soil, there is ABOU-MANGA, where the containing bed is not superficial, and some spots in the plain of Thebes, where MM. Hamy and Lenormant have found implements comparable in type with those of St. Acheul, and in connection with the old alluvia of the Nile, the relative date of which has, however, not been fixed.

It is stated that the instruments are not all of flint, but in some cases of porphyry, amphibolic rock, or other hard kinds of stone. J. EVANS

THE PROJECTED CHANNEL RAILWAYS

III.

WE have already considered two modes of crossing the English Channel by a railway, viz. one above the water by a bridge, and another below the water by a tunnel through the chalk. The two shores might be also connected by a submerged roadway passing direct through the water. It might be constructed either on the bottom of the channel or at a certain distance below the level of the sea. Submerged roadways have been proposed, some of iron, others of concrete; of the former of these we shall only consider such schemes as appear to have received sufficient attention from their originators.

These structures may be simply called tubes, because of their circular shape, which is, we all know, the most favourable form to resist pressure against collapse. The various propositions for the construction of iron tubes may be divided in two classes, viz.: 1st, schemes in which the parts of the proposed submerged tube are to be constructed on shore in certain lengths, afterwards to be united under water to form the permanent structure. 2nd, Schemes in which the whole tube is to be at once built in deep water.

Among the designs which belong to the first class, the best and most elaborate is that of the late Mr. Chalmers. His design is well known from his publication on the Channel Railway, which we consider a meritorious and ingenious production. He proposes a line of tube between the South Foreland and Blanc-Nez on the French coast, with a gigantic tower—or ventilator, as he terms it—midway in the channel in thirty fathoms of water. Having made this tower, he proposes to construct wrought-iron tubes on shore, each about 400 feet long, closed at both ends by watertight bulkheads. These tubes are to be floated, one by one, to the tower, and to be there submerged, "being drawn down by means of endless chains passing round pulleys or drums attached to massive anchor boxes on the bottom of the Channel." The separate parts to be submerged at one operation are to have each a floating-power equal to about 100 tons. A short description is also given how the ends of the tube about to be submerged should be drawn and attached to that part already permanently secured to the tower and the bottom of the Channel.