

Franklin Institute.—Circular Address of the Committee of Exhibition.

The Franklin Institute has always felt that, in order to give these Exhibitions the desired utility, it was necessary to make them general, and to bring together, as far as possible, the products of all sections of the Union. Every inducement will therefore be offered, and every facility afforded to the mechanics and manufacturers of all parts of the country, to take advantage of this Exhibition for the purpose of making their goods generally known; and goods forwarded to the Institute will be carefully preserved while under their charge, and will be so placed as to command a fair share of the attention of the numerous visitors.

The vast extent and convenient arrangement of the rooms in which the Exhibitions are held, present almost unparalleled advantages in the display of the goods, and every effort will be made to improve the opportunities which are thus offered.

The regulations will be substantially the same as those by which our former Exhibitions have been governed. The rule requiring that goods intended to be submitted to the examination of the judges, and to compete for a premium, shall not be deposited later than on the day previous to the opening, has been found productive of such convenience to the depositors and to the managers, that it will be hereafter continued.

The Institute has purchased a steam engine of sufficient power to drive all the working models of machinery which may be presented; and no disappointment will in future result from heretofore necessary dependence upon engines of faulty construction or insufficient power.

Premiums will be awarded for articles of peculiar merit and excellence, under the regulations hereunto submitted.

Believing, therefore, that this Exhibition will afford you a valuable means of submitting to public inspection such articles as you may be desirous of having more generally known and appreciated, we respectfully invite you to contribute, either personally or through your agents, such products of your skill. Their novelty, excellence, or utility, their style of workmanship, and their adaptation to the purposes intended, will thus be made known to dealers, and to the community in general, to the mutual benefit of both producer and consumer.

REGULATIONS.—1. The Exhibition Rooms will be prepared for the reception of goods, on Friday, the 12th of October, and opened for the admission of visitors on Tuesday, the 18th, at 10 o'clock, A. M., and the Exhibition will close on Saturday, the 27th, at 10 o'clock, P. M.

2. No goods deposited after Monday evening, October 15th, can be entered on the Judges' lists for competition or premium.

3. To insure a perfect impartiality, the managers of the Institute, the Committee of Exhibition, and all firms or partnerships in which a manager or a member of the Committee on Exhibitions, is interested, shall be excluded from competition; and the Judges shall be exclusively selected from persons practically acquainted with the several branches of manufactures on which they shall be appointed, but who are neither depositors of such manufactures themselves, nor in any way interested in the articles submitted to their examination.

4. Awards will not be confined to specimens prepared expressly for exhibition, but regard will be had to the prices and quality of the articles, compared with the same description of foreign goods, and with the specimens presented at former exhibitions, and no premium shall be awarded for an article that has received one at any former exhibition of the Institute.

5. Three grades of premiums will be awarded; styled a first, a second, and a third premium. When an article shall be judged worthy of a first premium, in case the maker has received a first premium for a similar article at a former exhibition, a certificate may be awarded referring to the former award, and stating that the present is equal or superior in quality, unless the improvement over the first award may be judged worthy of another first premium.

6. Proof of origin must be furnished, if required, for every specimen offered for exhibition.

7. All articles deposited must be accompanied by an invoice, stating the name and residence of the depositor; and it is particularly requested that the labels may be attached, bearing the name of the maker—in default of which, articles have sometimes failed to receive any award by the Judges. It is also desirable that the names of the articles should be marked upon them, and that those intended for sale should be marked with their prices, and the places where they can be obtained.

8. The Committee will use all diligence in preserving the goods from being lost or injured, by employing suitable persons to assist them in superintending the rooms, and also faithful and competent watchmen during the night; but all articles will be at the risk of the depositors, who are requested to place all small and valuable articles in proper show cases for their protection.

9. Arrangements will be made to exhibit to advantage any working models or machinery that may be sent in for exhibition, and contributions in this branch are respectfully invited. Experience has shown the interest which the public take in them, and the display is calculated to convey useful information. A careful and competent superintendent of machinery will be provided.

10. The mornings of each day, until fifteen minutes before ten o'clock, shall be appropriated to the Judges.

11. Neither owners nor depositors of goods will be admitted to the exhibition room during the time appropriated to the Judges, except at the special request of the Judges of the articles owned or deposited by them.

The above three grades of premiums are: 1st, a silver medal; 2d, a Bronze medal; 3d, a certificate. In addition to which, the Institute will award a gold medal, on the recommendation of the Committee, for such new branches of manufactures as may be deemed worthy of it by the Institute in general meeting.

Industrial Heroes.

BY THOMAS CARLYLE.

Richard Arkwright, it would seem, was not a beautiful man; no romance hero with haughty eyes, Apollo lip, and gesture like the herald Mercury; a plain, almost gross, bag-cheeked, pot-bellied Lancashire man, with an air of painful reflection; yet also of copious free digestion;—a man stationed by the community to shave certain dusty beards, in the Northern parts of England, at a half-penny each. To such end, we say, by forethought, oversight, accident, and arrangement, had Richard Arkwright been, by the community of England and his own consent, set apart. Nevertheless, in strapping of razors, in lathering dusty beards, and the contradictions and confusions attendant thereon, the man had notions in that rough head of his; spindles, shuttles, wheels and contrivances plying ideally with the same; rather hopeless looking; which, however, he did at last bring to bear. Not without difficulty. His townsfolk rose in mobs round him, for threatening to shorten labor, to shorten wages; so that he had to fly with broken washpots, scattered household, and seek refuge elsewhere. Nay, his wife too, as I learn, rebelled; burnt his wooden model of his spinning wheel; resolute that he should stick to his razors rather; for which, however, he decisively, as thou wilt rejoice to understand, packed her out of doors. O reader, what a Historical Phenomenon is that bag bellied, much enduring, much inventing man and barber? French Revolutions were a brewing; to resist the same in any measure, imperial Kaisers were impotent without the cotton and cloth of England; and it was this man that had to give England the power of cotton.

Neither had Watt, of the Steam Engine, a heroic origin, any kindred with the princes of this world. The princes of this world were shooting their partridges; noisily in Parliament, or elsewhere, solving the question—Head or Tail? While this man, with blackened fingers, with grim brow, was searching out, in his workshop, the Fire-secret; or, having found it, was painfully wending to

and fro, in quest of a "mouled man," as indispensable man-midwife of the same. Reader, thou shalt admire what is admirable, not what is dressed in admirable. Thou shalt learn to know the British lion, even when he is not throne-supporter, and also the British jackass in lion's skin, even when he is. Ah, couldst thou always, what a world were it! But has the Berlin Royal Academy or any English Useful Knowledge Society, discovered, for instance, who was it that first scratched earth with a stick, and threw corns, the biggest he could find, seed grains of certain grass, which he named *white* or *wheat*? Again, what is the whole Tees-water and other breeding world to him who stole from the forests the first bison-calf, and bred it up to be a tame bison, a milk cow? No machine of all they showed me in Birmingham can be put in comparison for ingenuity with that figure of the wedge named *knife*, of the wedge named *saw*, of the lever named *hammer*: nay is it not with the hammer-knife, named *sword*, that men fight, and maintain any semblance of constituted authority that yet survives among us. The steam engine I call fire-demon and great; but it is nothing to the invention of *fire*. Prometheus, Tubal-cain, Triptolemus! Are not our greatest men as good as lost? The men that walk daily among us, clothing us, warming us, feeding us, walk shrouded in darkness mere mythic men.

It is said, ideas produce revolutions: and truly they do; not spiritual ideas only, but even mechanical. In this clanging, clashing universal Sword Dance which the European world dances for the last half century, Voltaire is but one choragus, where Richard Arkwright is another. Let it dance itself out. When Arkwright shall have become mythic, like Arachne, we shall spin in peaceable protest by him; and the sword dance with all its sorrowful shufflings, Waterloo waltzes, Moscow gallopadés, how forgotten will that be!

Interesting Agricultural Experiments.

Some recent experiments in wheat and flour go to prove that both contain water, and that the quantity is more in cold countries than in warm. In Alsace, from sixteen to twenty per cent.; in England, from fourteen to seventeen per cent.; in the United States from twelve to fourteen per cent.; in Africa and Sicily from nine to eleven per cent. This accounts for the fact that the same weight of Southern flour yields more bread than the Northern. English wheat yields thirteen lbs more to the quarter than the Scotch. Alabama flour, it is said, yields twenty per cent. more than Cincinnati; and, in general, American flour, according to the authority of one of the most extensive London bakers, absorbs eight or ten per cent. more of its own weight of water in being made into bread than the English. The warmer the country the more is the water dried out of the grain before it ripens, and hence, when made into bread, it absorbs more water again, and is therefore more valuable. Professor Black has written a report for the Patent Office, in which he shows that the presence of water unfits these articles for preservation. The books of a single inspector in New York city showed that in 1847 he inspected 218,879 barrels of sour and musty flour. In his opinion the loss on these was \$250,000. Every year the total loss in the United States from moisture in wheat and flour is estimated at from \$3,000,000 to \$5,000,000. To remedy this great evil the grain should be well ripened before harvesting, and well dried before being stored in a good granary. Kiln drying is preferable. The mode of ascertaining the amount of water is this:—Take a small sample, say five ounces, and weigh it carefully. Put it in a dry vessel, which should be heated by boiling water. After six or seven hours, weigh it carefully, until it loses no more weight. Its loss of weight shows the original amount of water. All corn shipped to foreign countries should be well kiln dried. The great prejudice hitherto against Indian corn meal, among the working classes of Britain, was owing to its musty taste—almost every particle having been soured on the voyage. Kiln drying prevents this evil. A market for Indian corn may always be open in England, where it can be used for fattening cattle, and where we can sell it always at a profit, if it be kiln dried.

Land and Water.

The area of dry land to that of the sea is about 100 to 270, a little more than one-third. A twenty third part of the land consists of islands. There is more ocean in the southern than northern hemispheres. The superficial extent of land is three times greater at the north than the south. It is not known whether the poles are surrounded with land or an ice-sea. The North Pole has been approached within 7 degrees and the South within 11. All the great continental masses terminate pyramidically on the South. The Atlantic Ocean seems to have been an immense valley scooped out by floods that directed their force first to the north-east, then to the north-west, and then to the north-east once more. This view is supported by the parallelism of the opposite coasts of the hemispheres, where we see indentations standing over against projections. The present shape of the land is the product of two causes that were exerted successively; firstly, subterranean force, the measure and direction of which we have no means of discovering; secondly, powers that are at work on the surface. The elevation of continents has been an actual not an apparent one only, and is going on over vast areas at this moment. The coasts of Sweden and Finland are rising, it is said, at the rate of four feet in a century. On the south the upheaving power abates until, as some observers affirm, the land sinks. Lines of old sea levels are indicated along the coasts of Norway, by shells deposited by the present ocean, which lie six hundred feet above the present sea level. There are some spots on the face of the globe, in the interiors of continents which actually lie lower than the present uniform level of the ocean. If the whole waters of the ocean were to be drawn in from the hollows which they now cover, we should see that the irregularities in the surface of the earth doubled in extent, and the heights to which the mountains rise, would be visibly contrasted with the depths filled with liquid. Man would then perceive with some surprise that the tolerably level countries in which he has pitched his dwelling are in fact shelves half-way up elevations, the highest of which attain to between fifty and sixty thousand feet. In some parts of the ocean, no bottom has been touched with a line of 25,300 feet—4.5 English miles. The temperature of the sea varies like that of the air in various climes; but a series of careful observations teach us that in the usual state of the sea's surface from the equator to 45° of N. and S. latitude, it is a little warmer than the stratum of air that is upon it. It has also been discovered that there are great currents running underneath from either pole to the equator. The attraction of the sun and moon cause those regular and periodical disturbances of equilibrium which we term tides. In the open ocean the rise is not more than a few feet, but the opposition of coasts cause an elevation of water in some places to between 60 and 70 feet. In addition to under-sea currents there are currents along the surface which exercise a considerable influence on the intercourse of waters, some of them narrow enough to deserve the term of oceanic rivers, since they run through the main mass of water like streams between unmoved banks of land. There is the well-known gulf stream which commences south of the Cape of Good Hope, runs through the Caribbean Sea, the Gulf of Mexico, and the Straits of Bahama, turning eastward by the banks of Newfoundland, crossing the Atlantic, and frequently throwing the seeds of tropical plants on the Irish coast. The Pacific ocean has its great current also, that brings the cold water of high southern latitudes to the coast of Chili, and runs northward for some distance before it turns to the west. Ships in traversing that ocean will suddenly find a difference of 20° in the water when they pass from the adjacent water into this current.

Line of Steamers to New York from Scotland.

Messrs. Todd & McGregor, the engineers and ship-builders, are about to build a large iron steamer of 1600 tons, for the trade between Glasgow and New York. She is to be screw propelled, with engines of 350 horse power.