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Painters, 1st and 3rd Monday.
Coachmakers, 2nd and 4th Monday.
Crispins, (159), 1st and 3rd Tuesday.
K.O.S.C. Lodge 356, 2nd and 4th Tuesday.
Tinsmiths, 2nd and 4th Tuesday.
Cigar Makers, 2nd and 4th Wednesday.
Iron Moulders, every Thursday.
Plasterers, 1st and 3rd Thursday.
Trades' Assembly, 1st and 3rd Friday.
Bricklayers, 1st and 3rd Friday.
Coopers, 2nd and 4th Friday.
Printers, 1st Saturday.
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The Ontario Workman.

TORONTO, THURSDAY, JUNE 5, 1873.

THE WORLD'S FAIR OF 1873.

The exhibition now in progress at Vienna cannot but be regarded as marking a very important epoch in European history—following so speedily, as it does, the recent sanguinary conflict between the great continental powers, and presenting the picture of a grand international re-union, at which peace and harmony prevails, and Empires Kingdoms and Nations met, not in the din and panoply of war, contending for the laurels of military supremacy, but in active competition for the more glorious and permanent victories of peace, and for the honors of arts and sciences, industry and civilization. The first great exhibition in Hyde Park, London, England, in 1851—the conception of the late Prince Consort, "Albert the Good,"—was intended to demonstrate that the arts of peace and industry were more glorious than, and had triumphed over, those of war and destruction, and to give palpable evidence of the progress and development that had been achieved by enlightenment and civilization. Throughout the world the event was, at that time, hailed with joy, and was accepted as an harbinger and omen of continued peace and tranquility; and though, since that time, war has frequently reared its gory head, exulting in destruction and carnage—still there can exist no doubt but that the nations of the earth have been to a very great extent influenced by the civilizing and humanizing tendencies of the various World's Exhibitions that have been held—and peoples hitherto estranged by differences of nationality and dialect, mingling together in those gatherings, have been brought to realize more fully the common brotherhood of man.

The Vienna Exhibition, which is now attracting the attention of the world will, in after history, be set down as not the least and most insignificent element in the onward progress of this great and glorious work. When we consider that but a few years ago, Austria was regarded as, perhaps, the most backward of all the nations of Europe—the masses ground down by a galling feudal system; the energies of the people depressed by the rule of autocracy—the very location of the Exhibition of 1873 gives uncontestable evidence of the vitality and power of civilization. At the close of the Franco-Austrian war, when its disastrous termination deprived the Empire of its fairest possessions, and the country was threatened with financial ruin, Francis Joseph turned from the thought of military aggrandisement, and gave his energies to the development of the internal resources of the Empire. By the inauguration of reforms, and the pursuance of a more liberal policy, the country, in place of agitation and anarchy, presents an aspect of peace and prosperity, and the consummation reached by the holding of the exhibition now in progress, gives evidence of how much nobler and grander have been the accomplishments of the Emperor in the promotion of peaceful industry, than could have been achieved by continuing to indulge in dreams of military glory and ambition. It is to be hoped that this crowning triumph of wiser judgment may but incite to renewed diligence in the pursuits of peace, till the picture of Austria of the past, with all her dark records, shall have been forever blotted out by the picture of Austria of the future taking her place in the front ranks amongst the most advanced and enlightened nations of the earth.

EMIGRATION.

The annual report of the chief of the Bureau of Statistics of Commerce and Navigation for the United States, furnishes some very important figures relating to the bearing of emigration upon skilled industries. From an extract of the report we learn that during the year 1872 there arrived in that country 43,164 foreign skilled workmen, of whom 510 were coopers, 2,229 were blacksmiths, 269 were moulders, 6,689 were miners, 472 were machinists, 2,140 were shoemakers, 419 were cigar makers, 3,055 were carpenters, 3,264 were masons and bricklayers, 2,141 were tailors, and so on through the various trades and callings. One of the ablest publications in the United States devoted to the cause of labor reform—the *Coopers' Journal*—in discussing this subject, says:—

"The study of these figures forces the conviction that the labor market of this country is being, to a certain extent, 'Beared,' and that it is quite time the 'Bulls' took a hand in the game. Our large and boundless prairies can accommodate any number of the goaded agricultural laborers of the old world, but just now all the mechanical callings are uncomfortably crowded, and something should be done to discourage the immigration of skilled labor to this country, at least for the present."

We consider it a matter of regret that so few figures of reliability reach us in connection with the numbers and occupations of the emigrants who reach our shores; but if all the facts of the case could be arrived at, we are under the conviction that they would show a somewhat similar state of affairs to that referred to above—though, of course, to a more limited extent in point of numbers. Now, we do not wish to be understood as decrying the importance of the subject of emigration,—but the matter to be arrived at is, whether, in the main, the class of emigrants who come to Canada is that of which the country stands most in need. We do not deny that the agents appointed by the Governments — Dominion and Local — are using their utmost efforts in endeavoring to direct the stream of emigration from the Old World to our shores, and the success of those endeavors is testified by the telegrams which from time to time reach us of the thousands who have landed at Quebec, and from thence have distributed themselves throughout the various provinces; but we cannot but again protest against the unfair means that many of those agents are using in order to accomplish the purposes of their mission, making the most exaggerated and untruthful statements in relation to the matter of wages and cost of living. From information received from emigrants, we are convinced that very many of the skilled workmen, who have come here, attracted by the glowing accounts that were given by the emigration agents, have left better and far more remunerative situations than they were able to secure on their arrival here. There are, however, many who would gladly see all the mechanical callings even more than "uncomfortably crowded," but not from a patriotic desire for the prosperity of the masses, but that they may trade upon the necessities of the new arrivals, and thus wring from the toilers a larger margin of profits.

Would we, then, wish to retard emigration? Not at all. But the inducements held out to promote emigration should be based on the principles of the strictest accuracy. We have seen communications addressed to papers in the Old World, from writers in Canada, who were evidently subsidized for the purpose, in which offers of wages were made in a specific mechanical calling, fully ten per cent. above that which can be realized by the most skilled operatives engaged at the present time; and it seems to us that such efforts are made, and such inducements held out, with the sole purpose of overstocking the labor market. Such schemes may possibly be successful for a time, but it will be a sorry and fleeting success at the best, and will most likely recoil to the disadvantage of the prosperity of the country. We believe the great need of Canada at the present time is a large accession of agricultural laborers. Of this class we cannot receive too many. We want them to settle in our back country, and develop the resources of the great North West Territory. After this class shall have settled in any numbers, the demand for those of the mechanical callings will speedily follow. But first we need the pioneers. Of these the old world at the present time, has a surplus; and the main efforts of our emigration agents should be to secure as large an influx as possible.

THE LATE LIEUT.-GOV. HOWE.

Canada has lost another of her great statesmen in the sudden decease of the late Lieut.-Gov. Howe. His health for some time past had been precarious, though but little immediate danger was apprehended; and when honored by the appointment to the Lieut.-Governorship, it was generally believed that the rest which the occupancy of that position would bring him, would tend to restore him to health. But these expectations were disappointed in his sudden decease on Friday last.

LIFE AND LIFE FORMS.

No. 1.

[CONTRIBUTED.]

Many regard with great distrust the bold and rapid advance of science in the present day, fearing, not without reason, that it will result in the continued overthrow of opinions which have been handed down from less enlightened ages, but which had almost come to be looked upon as established truths. Happily, however, men who are in earnest in their pursuit after truth, are not to be influenced by any such weakness as to entertain any consideration for fears like these. Never before were there such vigorous and sustained efforts made as at present to enlarge the circle of knowledge, and to arrive at a proper understanding of *all* the phenomena of nature, whatever may be the mystery which, as in some cases, hangs over them, and undeterred by difficulties, however formidable, which may stand in the way. The aim may be a high one, but when its attainment is sought, as it is being sought, no limit can be placed to the progress which will be made in this direction. "Nothing impossible" is the true motto for the philosopher. A single individual can do little, but when the labors of successive workers, each starting from the highest point gained by those before him, very great results must be achieved. How many of the accomplished facts of to-day were the impossibilities of fifty or one hundred years ago? How much of the familiar knowledge of the school-boy now, was at no distant date the advanced and exclusive study of philosophers? And have we not every reason to believe that progress will be still greater in the future than in the past?

The question of life is a problem which has been the study and theme of men in all ages, and has engaged the attention of the most subtle and powerful minds in attempting to penetrate the mystery which surrounds it, and arrive at some idea of its nature, but without much success. There are, however, not wanting signs which seem to indicate the not very distant approach of its at least partial solution. The opinion that life is a "principle," or some kind of essence which presides over and directs all the actions of the body, which was long held and warmly defended, is now passing away, and is entertained by few whose judgment is of much value. The more probable view is, that life is a *property* or force, identified with every part of organized structures, so that when we speak of the life of an individual we use a word which in reality signifies a collection or circle of life properties, each having its peculiar characteristics, but so arranged, so interlaced, so to speak, with each other, and governed by some genial law, as to result in the perfect harmony of action which we see and feel. But these life or vital properties are not equally distributed. Some parts possess them in greater intensity than others, as in the case, for instance, of the blood and muscles, the reciprocal action of which is very intimate. So much so, that it has been found that if on the one hand the arteries which supply any particular muscle be tied, the muscle rapidly loses its power, and on the other hand, if the muscular vessels containing blood are by an accident deprived of vitality, the blood begins at once to coagulate in the same way as if taken out of the body.

The more advanced school of thinkers on the subject, hold it probable that, as the physical forces—electricity, galvanism, magnetism, light, heat, and chemical affinity—are convertible, or only different manifestations of the same force, so also with the vital forces; but it is doubtful if there is any true analogy in these cases, and that otherwise the grounds upon which it is based are so unsatisfactory that it must be classed with the many other rash speculations for which there is, *at present*, no justification.

Between the vital and physical forces there is a perpetual struggle, which possibly ends in the victory of the latter at death. Till then, however, the vital forces maintain the upper hand, and steadfastly resist any undue influence of external conditions, besides having the power to modify and mould both chemical and physical forces to meet the requirements of the organism, and often to act in direct contravention of them. But these vital forces are themselves governed by a higher law, and their action aroused and controlled by means of certain stimulii. Of these the most important is brought to bear by means of the beautiful system of nerves which are distributed through every portion of the organism, partly under the control of the will, but to a large extent wholly independent of it.

In small persons, and in small animals generally, the vital action is more intense than in those which are larger. We see evidence of this everywhere, but perhaps no where can it be better observed than in the case of insects, which generally exhibit an amount of strength, activity, endurance and tenacity of life which is almost incredible. As a very peculiar example we may take the flea. This will leap some hundreds of times its own length, and can drag after it slowly without much difficulty a weight at least fifty times that of itself. And Mr. Deslie has observed a fly, so minute as to be almost invisible, run nearly three inches in half a second, making in that space 540 steps. If a man went as fast in proportion—his steps measuring two feet—he would be obliged to run at the incredible rate of more than 20 miles a minute.

It is noticable also, that as we descend the animal scale, there is increasing tenacity of life, and of insensibility to pain. For instance, a tortoise has been known to live upwards of 18 days after its head had been removed. Even more remarkable than this is the case of newts. Spallangane tried the experiment of cutting out the hearts of three of them, and then released them, when they immediately took to flight, leaped, swam, and performed their usual functions for 48 hours. In another instance a mite, which had been transfixed on a point for examination, was found to be alive at the end of eleven weeks, while two beheaded dragon flies lived, the one for four and the other for six months, and they could never be kept alive with their heads on for more than a few days. The Rev. Wm. Denham arrived at similar results by experiments with the air pump. Birds, dogs and rats died in half a minute, a mole in half a minute, a bat in five minutes, a toad in six hours, a snail in 28 hours, while bees, wasps, etc., actually revived after being in the pump 24 hours.

The explanation of these curious results lies simply in the fact that in the higher animals the structure is so complex, and all the parts are so intimately and vitally related and finely balanced, that an injury to one has at once the effect of disordering the action of the rest to a less or greater extent, while in proportion as the structures become more and more generalised, this interdependency becomes more feeble and finally, in some of the lowest creatures, may almost be said to cease.

From time to time it has been supposed that the limits of animal life had discovered, but as our instruments have become perfected, these limits have been gradually extended, till forms of animal life are now known to exist of almost inconceivable minuteness, yet notwithstanding this, we should be cautious in concluding that we have yet arrived at the actual boundry. The nature and extent of the immense influence which these minute organisms exert in the world we are only beginning to realize, and the close and earnest study of this branch of science, as shown by Professor Huxley, becomes of the highest practical importance.

To exaggerate, in attempting to convey an impression of the multitude of organisms at present existing, would be impossible. Those only which are invisible to the naked eye, far transcend the power of numbers to indicate, and the mind, in seeking to grasp them, becomes bewildered, and is compelled to desist from the endeavor. A very remarkable discovery has recently been made, which very forcibly shows how vastly greater is the extent of animal life than is generally supposed or suspected.

Professor Tyndall, to whom science is already so much indebted, has found, conjointly with a Manchester friend, that even the atmosphere is so thickly populated with microscopic animals that we each inhale them at the rate of 37 millions in every ten or eleven hours, or over a million and a half every hour. This is not a pleasant fact to contemplate, but it is one of which there can be no reasonable doubt. It has its counterpart in the waters, which are even more fully populated. Ehrenburg has calculated that there were at least 500 millions of living active creatures in a single drop of water under observation, and this is quite borne out by the researches of others.

Those creatures which are large enough to be visible to the unaided eye may not be so numerous, but yet exist in the greatest profusion. To take, for example, the medusæ alone, which form the principal food of the whale. Capt. Scoresby, when crossing the Arctic Ocean, found that the olive green color which was observed over a large surface,