

would resent the slight to a royal house akin to its own, not only makes no remonstrance, but, according to rumour, has half a mind to follow the example. Perhaps revolution in South America is considered in the natural course of things. In the republican states a lustrum unmarked by some sudden rising has been the exception; and it is because it was the only independent monarchy on this side of the Atlantic that it was deemed worthy of special remark. But even as a monarchy, its overthrow was not without precedent. Mexico on the mainland and Hayti in insular America have had their imperial eras. Nor is it in modern times alone that empires have flourished and decayed on the soil of the New World. The earliest of the great powers built up in what is now a continent of republics dates back to a period so remote that only in ancient history probably may we look for its coevals in the eastern hemisphere. Authentic records of its rise and progress and disappearance are not extant, it is true, as are the stories of Greece and Rome, of Persia or Carthage. Nevertheless, there is strong internal evidence in favour of its existence. When Pizarro achieved his wonderful feat of arms, he found himself in contact with a people very different from the American Indians of our own annals. His enterprise was one of the boldest and most skilfully planned of the warlike undertakings of that age of adventure. Circumstances favoured him, but he did not long enjoy the fruit of his triumph.

The rule of the Incas, which was succeeded, after Pizarro's conquest, by that of the Spanish viceroys had lasted, it is believed, from (at latest) the middle of the 13th century till the advent of Pizarro. Although the Peruvians had no written records, they were not destitute of aids to the memory, and a class of men especially trained for the purpose had charge of the annals of the empire. Mr. Clements R. Markham, C.B., the latest historian of the Inca civilization, holds the opinion (based on careful local studies and long-continued research) that the empire founded by Manco Ccapac (in or about 1240) had been preceded ages before by another domination, no less imperial in its extent and power. The evidence that points to this conclusion is various. There is first, for instance, the testimony of studious men contemporary with the immediate descendants of the vanquished race, who were moved by enlightened curiosity to make enquiries concerning their origin, institutions and antecedents. Of such testimony, though a good deal that was valuable has been lost, a considerable proportion is still accessible. It was usual for the bards (as among the Celts and other nations of the Old World) to recite, in rhythmic language, the deeds of former Incas, and these were orally preserved and handed down by the learned men. In this way each generation taught the one that followed it. One of the historians who has placed these traditions at the command of modern readers was himself the son of an Inca princess, and had, therefore, an excellent opportunity of obtaining them at first hand. But recent investigators take little on trust that is not well sifted and corroborated by ample proof from various sources. It is in the architectural remains, in the domestic animals, and in the cultivated fruits and vegetables, that Mr. Markham finds independent confirmation of the native traditions. Cyclopean remains at several places are clearly alien to the genius of the Incas and must have been erected by a different race. The most

interesting of these—quite as worthy of study as anything unearthed by the Layards and Schliemanns of our day—are met on the southern shore of Lake Titicaca. Temple or palace, the weight of the gigantic stone masses used in its construction, as well as the elaborate carvings on portals and inner walls, reveal the will of an undisputed master of thousands of serfs or captives, such as were employed in the great fabrics of Egypt or Babylon. The fact that the most wondrous of these titanic structures was never completed suggests some unexpected interruption which left the hands of power empty of their sceptre and made the captor captive. How long must an empire and a proficiency in the arts, such as these remains bear witness to, have been in developing! De Candolle, in his *Origin of Cultivated Plants*, maintains that the potato was found in South America in a cultivated state, which must have taken ages to bring to pass. In its natural condition (as in Chili and elsewhere) it is a very insignificant tuber, about the size of a hazel nut. So with maize, with the cotton plant, with the edible roots called *oca* and *aracocha*. Some of these no longer exist save under cultivation—the wild sort having died out. Then as to animals, the llama and the alpaca—the one a beast of burden bearing coarse wool, the other yielding a thick fleece of silken fibre—had been domesticated and modified from the wild huanaco and vicuna ever so long before the arrival of Europeans, or even the establishment of the Inca dynasty. In addition to these indications of a gradual progress from barbarism to comparative civilization, the skill achieved in the working of the precious metals, the products of which excited the admiration as well as the cupidity of the Spaniards, evince an apprenticeship that must have taken many centuries to bear such results. Prescott computes the gold secured by the recasting of the vessels, utensils and ornaments extorted as a ransom from the worsted Inca at fifteen million dollars and a half. Yet all that treasure did not save Atahualpa's life.

The Empire of the Incas at the time of the Spanish invasion extended from the second degree of north latitude to the thirty-seventh of south latitude, thus embracing the present republics of Ecuador, Bolivia, Peru and Chili, and a vast undetermined area to the east of their actual limits. Some writers assign an earlier date than that which Mr. Markham adopts (1240) for the consolidation of the empire under the first Inca. Messrs. Rivero and Von Tschudi, for instance, make Manco-Ccapac's reign begin in the year 1021. The chronology of Garcilasso de la Vega and the other native authorities, is sadly confused, and the date is likely to remain uncertain. On one point there is agreement—that the Inca dynasty was not the first to raise the fabric of imperial power in South America. In fact the architecture alone is sufficient to prove the slow up-growth of an indigenous civilization, while some of the stupendous remains of the earlier monarchs indicate a despotism with a virtually unbounded supply of servile labour. Men of æsthetic tastes have often reproached America with its meagre past and the absence of those sermons in stone that are due, not to the patience or the wrath of nature, but to the skill, the pride or the fears of mankind. How unfounded the reproach is not only South and Central, but even North America, bear witness by countless relics of a wondrously diverse past. Between the founding of America's earliest empire

and the quiet but enforced abdication of her latest Emperor there intervened a period of manifold change, which the most erudite scholars and savants of Europe do not deem unworthy of all the learning and research of which they are capable.

CANADIAN INDUSTRIES.

III.

THE BARLEY TRADE.

As we stated in our issue of July 6, in no respect has the industrial development of the Dominion in recent years been more marked than in the enormous expansion of the grain and flour trade. As many of our readers have but a faint idea of the immense quantities of grain that are handled in our country and the superiority of the methods of preparing it for the market compared with those formerly in vogue, we present to them on another page views of three large elevators on the line of the Canadian Pacific between Toronto and Peterborough. These elevators were built and are owned by the enterprising firm of J. B. McKay & Co., of Toronto. The first and largest at Burketon is a grand building over 100 feet high, of a capacity of about 100,000 bushels. It is, like the others, completely covered with metallic shingles, which, while rendering them fireproof, at the same time add very materially to their appearance. The second at Myrtle, nine miles west of Burketon, would hold about 80,000, and the third at Green River, seventeen miles further west, about 25,000 bushels. They are located in the finest barley section of Canada, where the farmers so concentrate their time and energies as to maintain their prestige for growing the best samples that Ontario produces to-day.

These elevators are equipped with all the latest and most improved machinery for the expeditious handling and cleaning of barley, and are unequalled by any in the province. We also noticed with much interest the manner in which the power is transmitted from the engine to the top of the elevator at Burketon. The firm have adopted the Dodge system of rope transmission, and in this case convey some forty horse power with a series of Manilla ropes and groove pulleys. The same company's wood split belt pulleys are also adopted throughout.

When Messrs. J. B. McKay & Co. commenced business about ten years ago, there were no proper means of getting barley into an attractive and uniform condition, such as the malting trade of the United States was seeking. Recognizing this great want, they built their elevators especially to accommodate the A. Laidlaw & Co.'s Barley Cleaner (Toronto). These machines, of which J. B. McKay & Co. operate four of the largest size, (being, indeed, the only firm that employs so many), treat the barley by a method totally different from any others. By this process the "ands" are entirely broken off without the slightest detriment to the berry, from which at the same time all foreign grains, thistle heads, etc., are separated. The result is to give the barley a fine appearance and to eliminate all small grains, thereby saving the malster in skimmings. And the great success that has attended this firm's efforts shows that the malting trade appreciates their enterprise. In the great barley markets on the other side of the border their grain is especially sought after. Besides operating the above three points, they control all the other important stations between Toronto and Peterborough, from which barley is shipped to their elevators and there prepared for the market. They have the advantage of drawing their supplies from one section, a feature of great importance to malsters, as uniformity of growth in malting is thus obtained.

The excellence of their barleys has been proven by the fact that the Bergner & Engel Brewing Co., of Philadelphia, obtained the Grand Prize at the Paris Exposition this year—the beer exhibited by them being made entirely from J. B. McKay & Co.'s barley, of which they last year shipped the above firm over 100,000 bushels.