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PATENT POLITICS IN OHIO.

At the recent State Convention of the Republican party in Ohio, for the nomination of State officers, the following resolution was unanimously adopted as the policy of the party

"SIXTH.—We demand such a revision of the patent laws as will relieve industry from the oppression of monopolies." By the acceptance of this resolution, all the candidates, on the Republican ticket in Ohio, now stand publicly pledged to use their best endeavors to deprive the citizens of that State, and other States, of their existing rights to obtain patents. This may be a good way to gather votes, but to us it looks like egregious folly.

If there is any one law that gives more satisfaction than another, to working men, mechanics, inventors, and the public in general, it is the patent law, which secures to the humblest individual limited rights and property in new thoughts or inventions; and the attempt of these politicians, to legislate these rights away, will, we are confident, be scornfully rebuked by the masses of the people.

The existing patent laws of the United States secure to every man, woman, or child, who makes a new and useful invention, the exclusive monopoly thereof for the period of seventeen years; after which the invention becomes public property, and all persons may freely enjoy its use.

Under the stimulus of these beneficent laws, hundreds of new arts and occupations are yearly added to the national industries, contributing marvelously to the development and prosperity of the country. The great State of Ohio has long been prominent for the number and usefulness of the new inventions made by her citizens; while her remarkable growth in population, manufactures, and wealth is very largely due to the encouragement she has always given to the extension of patent monopolies within her borders. Many of her towns and cities are largely dependent upon, and in some cases have been nearly built up by, patent industries.

Indeed, it is questionable whether Ohio could to-day harvest her crops or carry on ordinary industrial operations if her citizens did not make use of hundreds of these monopolies which her astute Republican politicians now join in denouncing as disastrous to industry. We think they must know better. But if they are in earnest, if they really believe that industry is oppressed by patents, we advise them to commence at home and clear them out of their State.

Let them begin, for example, at Springfield, Ohio, a thriving town brim-full of patent monopolies. Let them take, first, the Champion Harvester concern, where they turn out reapers and mowers at the rate of one complete machine every four minutes. The great West is supplied with these splendid machines, they have a world-wide reputation, the farmers think they cannot get along without them; while hundreds of families at Springfield live in comfort by industriously engaging in their manufacture; and the founder of

the concern, once a poor, struggling, inventive mechanic, after years of exertion, has made himself comfortable, if not rich, by his monopoly. But this sort of thing, say the politicians, is oppressive, and ought no longer to be tolerated. To be sure, the patent will expire before long, by its own limitations; but if we are to believe the politicians, it ought to be broken up forthwith, and the industries of Springfield and other Ohio towns should in future be strictly guarded, by legal enactment, against the introduction of any more of such prosperity breeding, but oppressive, industrial patent monopolies.

CIVILIZATION BY UPHEAVAL.

The observations of Professor Marsh touching the cranial capacity of extinct animals show that the tertiary period of geology was peculiarly a period of brain development. What the determining condition of this remarkable increase of brain bulk and capacity for intelligence may have been, it is impossible to say; all we know is the fact that, at the time when, as the evolutionists hold, man was developing from the higher primates through the acquisition of some twenty or more cubic inches of brain, the entire animal world was favored by a similar though less remarkable increase of brain bulk and brain power. If there was a transition at that time from the animal to the human by natural evolution, the change was not, as has been asserted, anything radically unlike the changes exhibited by the lower orders of life.

But it is not our purpose to discuss the problem of man's origin as man. Sometime during the tertiary period he appeared; and we propose simply to consider how the low type of humanity which prevailed at first may have been developed, by means of climatic changes, into the higher type with which human tradition begins.

It is admitted by all schools of ethnologists that man must have appeared in a warm climate; on a tropical island, say men like Wallace and Darwin, for there only would his naked skin be no disadvantage, there his physical weakness would not be overtaxed before he could devise means of defense, and there food would be abundant and unobtainable. In no instance, to our knowledge, however, has any attempt been made to show how the inhabitants of such an island could be started on the road to civilization, and compelled to keep it.

The inhabitants of tropical islands do not improve of their own accord. The conditions of life under such circumstances are unchanging, and therefore progressive variation is uncalled for, if not impossible. There must be a steady change of environment, and change of a nature to compel increasing forethought and industry, to insure progression toward a higher order of life: a change which could have occurred to the primitive race of man only through a gradual refrigeration of the climate.

Take an island, for example, like Borneo. Its inhabitants are unchanging. Life is easy, food abundant, and all incentives to exertion absent. Peopled by a low race of savages and stationary as to climate, the history of one day would be the history of a thousand years. But suppose the climate to become cooler at the rate of one degree a century, as by the slow approach of a glacial period. From generation to generation the change would be imperceptible; yet in fifty centuries the tropical island would become an Iceland. Its fauna and flora would be entirely changed, and man would of necessity change with them. Clothing and shelter would gradually be called for. The spontaneous products of the soil would become less abundant, and less uniformly distributed throughout the seasons. Cultivation and care would become more and more requisite to secure sufficient food. From generation to generation the race would be compelled to study thrift, to protect their animal and vegetable possessions to aid them in the struggle for existence; and thus by slow gradation they would creep upward to a higher life.

A similar effect would be produced by a gradual geographical elevation; and it is a suggestive fact that the great centers of original civilization are regions of recent upheaval: the more recent the upheaval, the more advanced the human type. The youngest highlands of the world are the highest, those of the Andes and the Himalayas; on the one American civilization reached its earliest and highest development; on the other the white race originated. To the highlands of Thibet—the "roof of the world," as the natives call it—the traditions of all the great civilizations of Europe, Asia, and Africa point as the birthplace of the human race. Here the earliest white civilization had its origin. There were made the astronomical observations on which even the earliest science of the Egyptians was based: the most ancient records in the valley of the Nile figuring the heavens, not as they are seen in Africa, but as seen in Bactria, many degrees further north.

The geology of Upper India records a history such as we have imagined necessary for the development of a civilization. At a late period, geologically speaking, the entire region now occupied by the Himalaya mountains—and the Thibetan plateau so far as explored—was under the sea. At the time when the earliest traces of man begin to appear, it was a country of sub-tropical plains and fresh water seas. The recent river and pond shells of the Thibetan plateau are the direct descendants of warm water species, whose remains lie in the deeper strata, an evidence that the vast upheaval of the region was a gradual, not a sudden, change.

From this region, now barely capable of sustaining a sparse population, came the conquering herds which, at the dawn of history, overran the plains of Europe and Asia. In this region arose the race whose development is recorded in the Vedic hymns and the religious books of subsequent ages, and whose early traditions come down from the time of the gigan-

tic turtles whose remains are buried in the deposits of those ancient fresh water seas.

It is altogether improbable that the earliest civilization was developed by an immigrant race after the country had reached its present altitude. Men do not leave fertile lowlands for sterile mountain regions except under compulsion, and they are not likely to improve by the change. Besides, the region is now too high to sustain, much less to breed, an energetic race, such as the men of Upper India must have been when they set out to subdue the world: and by their own account, they were driven from their native home by cold—the inevitable result of excessive upheaval.

Another proof that the country was at a lower level than it is now, when it served as the great hive of the white race, is found in the fact that high altitudes are as incompatible with a vigorous development of man as they are with the agricultural requisites for the sustenance of a dense population. Within moderate limits, uplands are conducive to health and vigor; but above four or five thousand feet, the rarefied atmosphere is incapable of sustaining man at his best. This is specially noticeable in all Alpine regions and on high table lands like those of Mexico. To a still greater degree is it seen on the Peruvian plateau, where the Spaniards found a highly civilized but degenerate race. At a period geologically recent, that whole region lay at a lower level. At first the slow upheaval must have pushed forward, in a continuous line, the social and intellectual development of the people. It made them, in a double sense, a rising race. Ultimately, however, the limit was overpassed: the environment became repressive, not helpful; the people lost vigor and were no longer able to push on their civilization. Later they became unable even to maintain it, and for some time previous to the arrival of the Spaniards they had been losing ground.

PROGRESS OF THE GREAT SUSPENSION BRIDGE BETWEEN NEW YORK AND BROOKLYN.

By a recent act of the legislature of the State of New York, this great bridge property, which was commenced as a private enterprise, has become a public work, and the money to complete it is to be supplied from the treasuries of the two cities. The early finishing of the structure is therefore assured, and the work is now progressing with all possible rapidity. The last stone of the Brooklyn pier or tower was laid a few days ago—the last that can be placed until the cables are stretched. The tower now stands 271½ feet high from the tide level. In the tower as it stands, there are about thirty-five thousand cubic yards of stone, weighing about seventy thousand tons. The "saddles"—the things upon which the cables are to rest—will be put in place in a few days, and then work will cease for the present on the Brooklyn tower. It is expected that the New York tower will be finished before the end of the present season. It is over 200 feet high. The engineers also hope to finish the Brooklyn anchorage this season, and it is thought that before next fall the cables will be stretched across the river.

This bridge will have a greater span than any work of the kind now existing. The distance between the river piers is 1,600 feet. The total length of the bridge will be about one mile. The width of the roadway will be 85 feet, which is a little more than our famous thoroughfare of Broadway.

It is believed that one of the immediate results of the bridge will be to turn the current of increasing population to Brooklyn, and ultimately cause the annexation of that city to New York, in which case the latter will take rank in population next to London.

REFINEMENTS IN MODERN ASTRONOMICAL OBSERVATIONS.

The tools used by the modern astronomer are clocks to measure time, graduated circles to measure degrees and their subdivisions, telescopes to magnify distant objects, photographic apparatus to make permanent records of ephemeral phenomena, photometers to measure the comparative intensity of light, polariscopes to reveal the nature of certain luminous rays, and spectroscopes to reveal the chemical composition of the heavenly bodies.

The invention of the clock is of great antiquity; but it is to the wants of modern astronomy and other sciences to which it is applied (navigation, for instance) that the perfection with which they are now made is due. So with the graduated circles, which are applied to quadrants, sextants, octants, and astrolabes.

The telescope, invented by Janssen in Holland, about 1609, was successively improved by Galileo, Herschel, Dollond, Fraunhofer, and others, while lately Lord Rosse and our own Alvan Clark have surpassed all former efforts. But who can say what improvements the future has in store for the telescope, especially as liberal monetary compensation has become a stimulus to the ablest opticians, and the making of million dollar instruments has been discussed?

Photography is now largely used in astronomy, and the work done by it during the recent transit of Venus, in different parts of the earth, has enriched astronomical science with records of the highest value and permanency. One amateur astronomer, Mr. Rutherford of New York city, has for several years past applied this science to making records of the position of the stars, so as ultimately to obtain knowledge of their distances from us, and their motions in space; and in connection with this branch of the subject, he has invented instruments of measurement, to be applied to the photographic impressions, which have already given results superior in precision to the measurement by direct observation of the stars represented.

Photometric observations on heavenly bodies, comparing their relative luminosity and determining changes in their