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## a Cometary retrospect.

From recent calculations of the elements of Coggia, comet by Mr. Plummer, an English astronomer, there ap pears to be a close similarity between them and those of Comet II of 1737. There is a sufficient correspondence, it seems, to warrant the belief that the two comets are identical, and that we are receiving a second visit from the vagrant body which attracted the notice of the astronomers of a hundred and thirty-seven years ago. We find no record of its being a very prominent object, although it appears to have been observed in many of the great cities of Earope. Nor do we find statements of any peculiar phenomena connected with its appearance.
There will doubtless be many who, in gazing at the comet night after night as it gradually augments in brilliancy, will ponder as we have over the vast progress which the world has made since the era of the former visitation.
Locking at the condition of Science in 1737, from our present standpoint, it is easier to regard the circumstances neg. atively, to imagine our own condition if deprived of the results of discovery and of progress which have accumulated in the intervening years. The spot, on which the building in which we now are stands, was then but a green meadow. The crowded metropolis was existing only in the germ, and that merely a few straggling streets close to the water's edge. George II. was on the throne of England, and Louis XV . on that of France. Both amiable sovereigns were struggling to monopolize as much of North America as possible; and although at the time peace reigned in the colonies, it was but a temporary one, which ended in still fiercer hostilities seven years later. Sir Isasc Newton had been dead for six years, and the mathematicians of England were ar rayed againat those of the continent, squabbling and bick ering, with an acrimony intensified by international jealousy, over the theory of gravitation. Newton had studied out the subject of electricity and had invented the glass globe machine. Steph• nGray had also made some investigations, but no one had ventured a thrcry, nor had an application of the new pbenom. na been euggested. Telegraphy, the galvanic battery, the ionumerab.e inventions based thereon, were ail things of the future. There were plenty of alchemists in Europs, and the science of chemistry was just wrenching itself free from connection with their chimerica philogiston, a substance whirh Cavendish in subsequent dis. philogiston, a substance whirh Cavendish in subsequent dis-
coveries believed identical with hydrogen. But the transition period in chemical science was yet nearly forty years distant. Priestley, the discoverer of oxygen, was but an infant. Black, the investigator of the alkalies,and Scheele, the inventor of modern organic analysis, were likewise children. Out of the sixty-three elements, but fifteen were known. Aluminum, chlorine,orygen, hydrogen, nitrogen, platinum, and nickel were among thone which had never been recognized.
Newcomen's stemm engine was used in the mining dis-
tricts, and the boy, who sat beeide it and worked the condenser valves, had not been struck with the brilliant idea of making catches and strings perform the labor in his stead. The Marquis of Worcester and James Watt were unknown
to fame. The first railroads were in use in the coal districts to fame. The first railroads were in use in the coal district
of Northumberland and Durham, but the rails were nothing more than wooden beams, and iron was not to be substituted for them for thirty years. In the blast furnaces wooden bel lows were in use. Puddling,rolling, and the hot blast were un known. In Europe cast steel had never been made, and but a short time had elapsed since the publication of Réaumur's work, makingknown the process of manufacturing ordinary steel. In this country Jonah Higby's patent, obtained from the Connecticut legislature, for a "curious art to transmit common iron into good steel" had just run its term of ten years. Having no autonomy as a nation, we had no patent rigl, evetom in those days, and even civilized France had
ffiort toward establishing one. The arts of photo grspty or sun painting in any form were undreamed of.
The sciences of aeronautics and of agricultural chemistry The sciences of aeronautics and of agricultural chemistry
had never been imagined. Surgeons hacked off the limbs of had never been imagined. Surgeons hacked of the limbs of less of the agony they inflicted, for anæsthetics were un known. The phenomena of digestion were but little under stood, and quinine, with hundreds of other remedies now comimon, had not been discovered.
Whale oil was burned in the lamps, which formed the sole means of illumination when candles were absent. Petroleum, paraffin, and illuminating gas were yet to be found. In artillery and implements of war, the bayonet had just superseded the pike, the flint lock mulket was just coming in to use, while a single monster cannon of the present day would have dispersed whole regiments armed with the primitive artillery then employed.
Laplace had not given his labors to the world. Saturn's rings and satellites had not been discovered, and the path of that planet was supposed to be the outer bound of our solar system. The spectroscope had made none of its wonderful revelations, and the diatances of the fixed slars, their ap parent motions, and the fact of their being suns and centers of other systems, the 5,700 nebulæ, and the 136 asteroids, al were unknown.
India rubber had been discovered one year. There wat no definite system of botany, and Cuvier's researchea in natural history had not appeared. The caloric engine, the hy draulic press and ram, the sewing machine, and the divin bell had never been thought of. Blowpipe analysis and the atomictheory, a system of logarithms, calico printing, the steam printing press, all were yet to be invented. No one
had deciphered the inscriptions on the monuments of Egypt. had deciphered the inscriptions on the monuments of Egypt.
Jenner had not introduced vaccination, nor Hahnemann homœopathy as a school of medicine. Steam navigation and the screw propeller were yet to appear. Captain Cook wa making his celebrated voyajes around the world. Immense portions of Australia, of Africa, of the polar regions, had never been visited by civilized races. Anthracite coal had to Sciener burned, nor khe powerful explosives now was known as a profession on this side of the Atlantic, and arti ficial teeth had not been invented. The first chronometer had not been completed. The pianoforte was a new-fangled invention, which no one would have aught to do with until his Majesty Frederick the Great of Prussia deigned to buy one ten years later. Polarized light had not been discovered. No post office system had been developed by any government, nor had any improved means of teaching the deaf and dumb
been adopted. Steel pens were unknown, and the Scientrfic American was not one of the seven newspapers then existing in North America.
Our retrospect already extends feyond intended limits, and we have far from even summarized the great discoverie of the past century and a half. That our descendants wil surpass us as much as we do our ancestors is within ever pears, of probability. When our celestial visitor again ap gaze of earthly inhabitants, regarding the magnitude o whose knowledge and whose powers it would be idle even to speculate.

## TAXING POWER OF THE LEGISLATURE.

Law, in its true sense, is the product of the highest reason coupled with the most exact justice. The Civil or Roman Law and the Common Law of England are to be admired a models. The great deviations from genuine law are to be
found in arbitrary acts of our State Legislatures, seriously found in arbitrary acts of our Stato Legislatures, seriously affecting the rights, liberties, and property of individuals, in contravention of constitutional guaranties and those of the common law.
The most notable instance of this may be found in such legislative acts as provide for the disbursement of large sums of money in making public improvements, and then charging the whole cost as a tax on epecific individual prop erty without the consent of the owners, and, as has some times happened, to the entire confiscation of the pro perty. The power of the legislature to do this, and to act as the final judge on the propriety of any public improve ment, from which the individual has no redress, although
ruined thereby, is now, as we understand the law, laid ruined thereby, is now, as we understand the law. laid down
by the Court of Appeals of the State of New York.

This doctrine is so arbitrary in form and so destractive of individual rights that it becomes a reliof to know that our sister State of New Jersey, through Chief Justice Beasley, of its Court of Errors and Appeals, lays down a much mild
er and wiser rule for that State, in a recent decision made
by him at the suit of "The Mayor and Common Council of Newark aids. The State, Agens et al.
The facts were that a certain street in Newark had been repaired under an act of the legislature which provided that two thirds of the cost should be imposed on the owners of lots fronting on the line of the improvement, and one third on the city treasury; and the question was whether the legis lature could fix, at its mere will; the ratio of expense to be put upon the owners of the preperty along the line of the improvement. The following is an extract from the very able opinion of the Chief Justice, fully concurr d in by hi associates, and well
this and other States:
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"* * ${ }^{*}$ That the effect of such laws may not extend be ond certain prescribed limits is perfectly indisputable. It
is upon this principle that taxes, raised in counties, towns is upon this principle that taxes, raised in counties, towns
and cities, are vindicated. But while it is thus clear that the burthens of a particular tax may be placed exclusivel on any political district to whose benefit placed exclusivel to to ure, it seems to me it is equally clear that, when such bur then is sought to be imposed on particular lands, not in themselves constituting a political subdivision of the State
we at once approach the line which is the boundary we at once approach the line which is the boundary
between acts of taxation and acts of confiscation, I think it impossible to assert, with the least show of reason, that the legislative right to select the subject of taxation is rot a limited right. For it would seem much more in accordance with correct theory to maintain that the power of selection of the property to be taxed cannot be contracted to narrow er bounds than the political district within which it is to op
rate, than that such power is entirely illimitable. If such prerogative has no trammel or circumscription then it follows that the entire burthen of one of these public mprovements can be placed by the force of the legislativ will on the property of a few enumerated citizens, or even on that of a single citizen. In a government in which th legislative power is not omnipotent, and in which it is
fundamental axiom that private fundamental axiom that private property cannot be taken
without just compensation, the existence of an unlimited right in the law-making power to concentrate the burthen of a tax upon specified property does not exist. If a statute should direct a certain street in a city to be paved, and the expense of such paving to be assessed on the houses standing at the four corners of such street, this would not be an act of taxation, and it is presumed that no one would assert it
to be such. If this cannot be maintained, then it follow that it is conceded that the legislative power in question is not completely arbitrary. It has its limits, and the only in quiry is where that limit is to be placed.
So far as the particularized property is specially benefited an exaction to that extent will not be a cond mnation o property to the public use, because an equivalent is returned upon the land owner is justified.
Speaking on this subject, Chief Justice Green says: 'The theory upon which such assessments are sustained, as a legitimate exercise of the taxing power, is that the party assessed is locally and peculiarly benefited, over and above the ordinary benefit which, as one of the community, he receives in all public improvements, to the precise extent of the assess
ment." ("State $v$. City of Newark, 3 Dutch. 190.) It follows ment." ("State $v$. City of Newark, 3 Dutch. 190.) It follows then, that these local assessments are justifiable on the ground alone that the locaity is especialy to me benefited by the out reason can be assigned why the tax is not general. An as sessment laid on property along a city street for an improve ment made in another street in a distant part of the same city would be universally condemned, both on moral and
legal grounds. And yet there is no difference between such an extortion and the requisition upon aland owner to pay fo a public improvement over and above the exceptive benefi received by him. It is true that the power of taxing is one of the high and indispensable prerogatives of the government and it can be only in cases free from ail doubt that its exer cise can be declared by the courts to be illegal. But such a is specified out of which a public improvement is to be paid for specified out of which a publy imparted to it by such improve ment. As to such excess, I cannot distinguish an act exactin its payment from the exercise of the power of eminent domain. In case of taxation the citizen pays his quota of the commo burthen; when his land is sequestered for the public use, he contributes more than such quota ; and this is the distinction betweon the effect of the exercise of the taxing power and
that of eminent domain. when, then, the overplus beyond benefits from these local improvements is laid upon a few andowners, such citizens, with respect to such surplus, ar required to defray more than their share of the public outlay and the coercive act is not within the proper scope of the power to tax. And as it does not seem practicable to defin yond which it cannot be legitimately extended, and as ther is, as has been shown, necessarily a limit to the power of se is, as has been shown, necessarily a limit to the power of se
lection in such instances, the principle stated in the case cited is, perhaps, the only one that can be devised whereby to gra duate the power. Consequently, when the improvement, a in the present instance, is primarily for the public welfare, and is only incidentally for the benefit of the landowner, the rule thus.
A full review of this able decision and the cases it cite would interest and instruct all lovers of sound law. It im parts the good old doctrine that States and Legislatures ar aly the product of an aggregate of individuals, created alik for the general and individual good, and not to be the mean of oppression or extortion of the highest or the most weak and humble citizen

## RECENT PRINTING PRESS IMPROVEMENTS.

In the working of nearly all printing presses the sheet of paper are supplied by hand, the workman being known as " feeder." Each sheet must be taken up singly and exactly placed on the feed board, where it can be seized by the prese ippers at the propermoment, and carried to the types. Any arelessness on the part of the feeder results in bad printing and the spoiling of sheets. Measured by the manual forc xpended, the feeder's labor is slight; but no press can b run, not even for the smallest job, unless the feeder is on hand to place the sheets, while his intiorable weekly wages
are a serious expense in every printing office. Many have been the attempts made, extending over a period of twenty

