and progressive developement of the Queen City of the West. Since that is not the case, suffice it to say, that in 1793 Lieut. General Simcoe caused a survey of, what is now Toronto harbour, to be made. At that time the primeval forest fringed the lake, and the dense solitude was only enlivened by two families of Missassogas. In the following year 1794, His Excellency removed from Navy Hall, Niagara, to the site of the future metropolis, and in a few years the signs of industry were visible. In 1817, the city, then named Little York, contained a population of 1200 In 1830 it had increased to 2860, in 1840 it contained 15,000, and in 1850 the population amounted to 25,166, since then it has rapidly increased; but as the census is now in the act of being taken we will not hazard a conjecture as to its present extent. In 1797 Little York became the capital of Upper Canada, and remained so till after the union of the two provinces, when the seat of government was removed to Kingston under the administration of Lord Sydenham. In 1834 it was incorporated and divided into wards for civic purposes. If further information was desired as to the resources of taxable property, &c., &c., we would refer our correspondent to that very excellent work—Canada. Past, Present, and Future, published in parts by T. Maclear, Yonge Street.

D D Your hypothesis is false, and therefore any reasoning founded upon it would be erroneous. You must endeavour to move through society with your eyes open, or you are sure to be left behind.

Toronto Mechanics' Institute.

On the evening of Friday se'ennight, P. Freeland, Esq., delivered a lecture on the Microscope to a respectable audience in the Mechanics' Institute. After a very lucid exordium the Lecturer said:—The earliest account of the microscope, as a complete instrument, is that given by Borrelli, who ascribes its invention to Jansen, and declares that in the year 1652 he presented several of them to the Arch Duke of Austria. These instruments are said to have been six feet in length, and composed of tubes of gilt copper, supported by thin brass pillars in the form of dolphins, the whole fixed on an ebony stand, which also held the subjects to be examined. No particular description is given of their internal construction nor of the adaptation of the lenses, but they seem to have been composed of two lenses, one concave and the other convex. These were, succeeded by instruments composed of two convex lenses. Fontana, in 1646, published a description of one which, in 1648, he had constructed with such a combination of lenses. For nearly a century from that date, little advancement was made, but within the last twenty years the compound microscope, from being a mere toy, has attained a very high position among philosophical instruments, unfolding, as it perfectly does, the transcendent beauties of form, colour and organization so abundant in the minute works of nature, and aiding greatly in the enquiries after truth. In 1824, the late Mr. Tulley, of London, constructed an achromatic object glass for his own microscope after a good deal of labour, about nine-tenths of an inch of focal length. This was the first glass of the kind made in England. Since that time the improvement of the microscope has been very rapid. Microscopes, generally speaking, are either simple or compound. The simple Microscope is one which is composed of one, two, three, or more lenses, so arranged as to give a magnified view of the object itself; no matter how complicated and elaborate the mechanism may be which is connected with it, so long as the object itself is seen, and not a magnified image of it, it is still a simple Microscope. To understand this form of the instrument, requires no great degree of attention—nor the possession of very acute perceptive faculties. A pair of ordinary spectacles, with convex glasses are nothing more than a pair of simple Microscopes conveniently fitted up for constant use. The principle upon which they act is simply this,—that they allow us to bring the object very close to the eye, and at the same time enable us to see it clearly and distinctly, and magnified in proportion, as the distance between the eye and the object is diminished. This is evident if we bear in mind what is meant by the apparent magnitude of objects. Suppose for instance, a shilling were placed at a distance of 100 yards from the eye, it will scarcely be perceptible—at half that distance it would appear to be a small round body, but we could hardly pronounce what, while at the distance of a foot its apparent magnitude is so great, that it appears to cover and totally hide from view a distant object 500 or 600 times the size of itself. But suppose the same object is about 20 feet distant from us, and a convex lens, of 5 feet focal length, be placed half way between it and the eye, (i. e. 10 feet from each,) it is plain that the image of the object given by the refraction of the rays of light passing through the lens, will be exactly the same size as the object, yet because we view at the distance of 6 inches, its size is increased in the proportion of 6 inches to 20 feet, or as one to 40, i. e. 40 times, the shilling is in fact magnified 40 times, merely because we bring an image of it nearer the eye. The same effect is produced by similar means without the intervention of any glass, but if the object be brought very close to the eye, within one inch say it appears very indistinct, because what is called, the crystalline lens of the eye is not sufficiently powerful to collect the rays passing from the object, and from them to a focus on the retina; if, however, we now place a convex lens between the object and the eye, so that the object may be in the focus of the lens, it will collect the rays diverging from the object and cause them to enter the eye in parallel lines. The lens of the eye being thus aided from without, having no more than its own proper work to perform, will give us a clear and distinct view of the object; and the degree to which it is magnified may be easily ascertained by dividing six inches by the focal distance of the lens—thus a lens of one-tenth of an inch focal length, will magnify 60 times—one of 100dth 600 times. The most perfect form of the instrument is where the lens or lenses are so arranged, that the focus can be adjusted at pleasure without being affected by the tremor of the hand The compound, differs from the simple Microscope, in being composed of several lenses so arranged that instead of viewing the object itself we only see a magnified image of it. The arrangement of the apparatus in the compound Microscope is various, differing with the taste or skill of the constructor; the arrangement of the glasses however, is pretty near the same in all. Its most perfect form (speaking now merely as to its practical value as a philosophical instrument) is that which is commonly called the Achromatic Microscope. The first consideration, and one upon which the proper and satisfactory working of the instrument mainly depends, is to have the different parts arranged, to be free as possible from vibration, or to have them all vibrate alike; if this is not attained, it will be almost impossible to use a high magnifying power, for the tremor arising from the defective arrangement, will be magnified with the whole power of the Microscope, so as to convert what ought to be a well defined image of the object, into a confused mass, defying minute or satisfactory inspection. Another form of microscope very popular, is the solar microscope invented 1738 by Dr. Nathaniel Lieber Rubin, of Berlin, and first exhibited by him in London, the year following, before several of the members of the Royal Society and the most eminent of the opticians of the city From the time of its invention, though much improved in many respects, and at first creating no little sensation in the scientific world, it gradually fell into disuse and was almost forgotten, chiefly owing to the uncertainty of obtaining the solar light, without which it was powerless. Till the invention of the lime-ball light by Lieut Drummond, again brought it to use under the uncouth name of the "Oxy-hydrogen Microscope"—Since that time many valuable improvements have been made in it, but the principal feature in its construction still remains unchanged. In its simplest form it is very similar to a common Magic Lantern; it consists of a single convex lens, in front of which and at a little greater distance from it than its focus is placed the object to be viewed, the rays of the sun are reflected by a common mirror, and after being condensed by the lens, are made to fall upon the object, an enlarged image of which may be found on the other side of the object lens, and may be received on a screen or wall, where it will appear magnified in proportion to the distance of the screen to the lens. The image, however, in this form is very indistinct, and such an instrument was, in Dr Robinson's opinion (an opinion by the way, in the gallantry or justness of which I can by no means concur,) "only fit to amuse ladies." The solar microscope, even in its most perfect form, is only used for amusement; to the scientific observers of nature, and enquirer after her hidden wonders, it presents but few attractions—the compound achromatic microscope far excels it in practical value, affording a clearer, better defined and much more perfect view of an object in all its variety of colour and texture, as well as a better opportunity of observing it in all its varied organisms; while, if necessary, it enables him while it is under inspection, to dissect and note the internal arrangements of the insect, or whatever may be under observation, which in the solar microscope would be entirely out of his power. Sir Isaac Newton was the first who essayed to construct a reflecting microscope, and his first one he completed in the year 1676. In 1830 or 31, this instrument was improved upon by Mr. Potter, while similar instruments of different degrees of merit, and intrinsic excellence, have at various times been made, yet no reflecting Microscope has been constructed which at all equals the Achromatic refracting one. But who will say what the next 20 years may bring to pass in this instrument; judging from past experience it will doubtless be much improved, and may even yet as far surpass in practical value, even the compound Achromatic Microscope as it is now behind it. I have already spoken of the Microscope as second to none in importance. To the casual observer or mere superficial thinker, these discoveries and results which have been made by this instrument, may be thought to be limited; but we can scarcely turn our attention to one single department of Physical science where it has not rendered signal service. To the Geologist—its assistance is of great importance; not only does it aid him in arriving at conclusions apparently the most remote, yet by it revealed in light so clear, as almost to amount to a demonstration, but it shows him that changes of great magnitude in the structure and appearance of the earth, long looked upon as difficult scientific puzzles, are entirely attributable to the incessant labours of countless millions of atomic animalcules prevailing too, to such an astonishing extent, that many portions of the earth are composed almost entirely either of the works of these living atoms; or of the bodies or shells of the tiny labourers themselves. The polishing powder called Tripoli or Rotten-stone, so extensively used in the arts for producing a smooth