each year range from 46 to 72. In the first year the number was only 38, but it was never afterwards so low. The Corporation of Dublin, after a stormy discussion, have at length succeeded in carying a motion by Alderman d'Arcy, to the effect that, as the Catholics of Ireland are anxious to extend the advantages of education in the highest branches and with that view have, at great expense, established the Catholic University, which already has a large number of matriculated and non-matriculated students, it is the duty of the Government, which professes a desire for the promotion of first-class education, to encourage and facilitate this great educational effort by granting a charter to the Catholic University. The motion was carried by a majority of 28 to 10.—*Educational Times.*

—The New-York papers announce the advent to this country of a Mohawk Indian, *en route* to Oxford, for the purpose of finishing his education. Oronhyatekha is reported to be twenty-one years of age, and to be from the Reservation of the Six Nations, near Brantford, upon the Grand River, Canada West. For two years past he has been a member of Kenyon College, Ohio, and upon the late visit of the Prince of Wales the royal party became much interested in him. He comes under the auspices of Henry L. Acland, M. D., F. R. S, late physician to the royal party, and then and now Regius Professor of Medicine in Oxford University.—*Ibid.*

—Mr. Léon Chevreau, Prefect of the Department of Oise, France, has lately addressed a circular to the mayors within his limits, inviting them to take the necessary steps to provide every school in the *communes* with a garden, designed for the practical teaching of horticulture and arboriculture. Mr. Chevreau urges the mayors to do all in their power to secure these advantages for the schools, so that the pupils may, while enjoying the usual relaxations in study, have an opportunity of acquiring a practical knowledge of the arts that now constitute most important sources of rural wealth. The functionaries to whom the circular is addressed, are requested to submit plans which may be acted upon in making the desired acquisitions,—the prefect pledging himself to assist them in this enterprise by all the means at his disposal.

SCIENTIFIC INTELLIGENCE.

—The complete success of the Artesian well at Passy has given lively satisfaction to all, and especially to those who appreciate the scientific interest which attaches to it. The question of water is of itself interesting enough to the Parisian people who have been reduced hitherto to the Seine as the principal source of potable water. The Prefect of the Seine had conceived a project for an aqueduct to be fed by the numerous springs in the neighborhood of Châlons sur Marne. It seems quite remarkable that this project was little to the public taste and numerous voices were raised in favor of the river Seine! The Parisians are convinced that this river water is excellent; I will not affirm the contrary, but I am often struck with the complaints of strangers who generally charge upon this water the indispositions to which they are exposed during a visit in Paris. On the other hand I cannot maintain that in the long run an aqueduct is not the most economical provision for water for those who are prepared to meet the first cost. The example of Rome, which has been thus supplied even to the present day by the aqueducts of the Cæsars, proves this beyond dispute: —what would have been the expense during two thousand years of raising the water of the Tiber to a suitable height, if the Romans had been reduced to this method?

The city of Paris while awaiting the adoption of more thorough measures for attaining her water supply, has achieved an experiment which has given an excellent result, resolving several important questions and opening new ones. The first and most important question is to know if the water in a well of large dimensions will preserve an ascensional force sufficient to furnish a quantity of water proportioned to its increased diameter. Assuming that the water in the Passy well should rise with an abundance equal to that in the well of Grenelle, it ought to furnish near 40,000 cubic meters in 24 hours. (The cubic meter =220·17 gallons). Mr. Kind, the German engineer, the inventor of the method used in boring this well, and charged with the execution of the work, contracted to guarantee only 13,300 cubic meters, and on this estimate the plan was adopted. The boring commenced in September, 1854, and was finished on the 24th of September, 1861. The flow has remarkably exceeded the estimates—commencing slowly at first, on the 27th of last September it had reached 25,000 cubic meters and finally rested at 20,000 c. m. This yield, it is to be remembered, was found constant only at the well's mouth, and diminished very considerably when the tubes were added which carried it up to 25 meters above the ground. The well of Grenelle which yielded 2000 litres per minute at the surface, gave only 630 litres, less than one third, at the summit of a tube rising 33 metres above the level of the surface.

The second question is, what will be the influence of the new well upon the old, distant from it about 3000 metres (less than two miles) The latter soon commenced to show a diminished flow, and by the 1st of October the diminution had reached a fourth of the ordinary yield, falling from 630 to 460 litres per minute, a loss of about 40,000 gallons in 24 hours. The hope now is that there will be an increase again in the flow at Grenelle when the water of the Passy well by being raised considerably above the level of the earth shall again reestablish the pressure. It appears impossible to foresee what may be the final result of this operation. Mr. Kind's method of boring perfectly met what was intended and the well had reached at the end of two years and three months 528 meters in depth, when a crush in the upper part seriously retarded the progress of the work. It required almost three years to repair this accident, and the total cost estimated by Mr. Kind at 350 thousand francs will reach near a million.

The water sheet is pierced 33 metres lower down than at the well of Grenelle—the latter being 547 metres absolute depth, and 511 m. below sea level, the well at Passy the orifice of which is 1om.5 higher has an actual depth of 588 m. or 533 m. beneath sea level. The temperature of the water is the same in both wells =28° C. or 82°.4 Fh.

It is easy to see that the third question—what advantage is it to make a new experiment of the same kind?—leaves an ample field for discussion. [We would say on this point that the experience of California has been decidedly adverse to the multiplication of Artesian wells, in the same hydrographical basin. Eds.]—*Silliman's Journal.*

—Your readers will find more interest probably in a notice of observations made during a recent visit to the famous Tunnel now in progress through Mt. Cenis, already more than once noticed in these pages.

This tunnel, the execution of which has been assumed by the Italian government, presents peculiar difficulties, especially because it is impossible, owing to the enormous superincumbent mountain mass, to operate at more than two places. The mountain rises to the height of one thousand to fifteen hundred metres (2250 to 5000 feet, nearly) above the level of the gallery.

It was requisite from the first to find means to render the work as active as possible and employ machines for boring the blast holes. The little machine which moves the drills is ingeniously constructed but offers no difficulty to a mechanician. The percussion and rotation of the drill rod is accomplished by the power of compressed air which also injects a stream of water into the blast hole. In the trial made before the Geological Society of France which was conducted in one of the work shops of the company the drill entered a huge block of marble at the rate of 50 centimeters in 10 to 15 minutes (about 1¼ inches per minute). The feature of the process which interested us most was the production of the motive power. It is accomplished by an ingenious application of the hydraulic ram so much used in the United States, and set up here on a gigantic scale. The use of steam power presented great difficulties in a tunnel, each half of which when near its end will be over six kilometers long (=3¾ miles). They could not think of setting up boilers in the tunnel itself, since it was plain there would be serious difficulties in ventilation, and the attempt to conduct steam to so great a distance by pipes, would involve the loss of a great part of the power. By replacing steam with compressed air they enjoyed the double advantage of an economical application of the power at a distance from its source, and the use of the escaping air to renew the air of the tunnel. On the Italian side at Bardoneche, the air pumps are set up at about a kilometer from the opening of the tunnel, and they will act toward the last through nearly two leagues distance. The column of water which compresses the air in the chamber of the hydraulic ram is 25 metres high by 60 centimetres in diameter, the compression of air in the reservoir of the ram at the moment of fall is six atmospheres—at this instant a valve yielding at five atmospheres opens and a part of the compressed air escapes into immense boiler-like reservoirs. Five or six of these apparatus are needed for the regular progress of the work in the tunnel. The inventor of this remarkable apparatus, Mr. Tommelier, is director of the works. It is impossible to conceive any thing better adapted for a mountainous country where water is abundant. The apparatus appeared to us simple enough in its essential parts, which permitted the use of adequate solidity in the rest to resist the formidable shock with which it is shaken at short intervals. If the construction of these machines and the boring leaves little to desire it is by no means so sure that the perforation of the tunnel can be accelerated as much as would be presumed. They have perfected the rapidity of drilling, but the great labor of removing the rubbish is not accomplished more quickly than before. At the outset the engineers estimated six years, and to-day it seems probable that 12 years will be required to finish the tunnel if no unforeseen obstacles arise in the work.—*Ibid.*

—The annual meeting of the Acclimation Society was held at the society's offices, 3, Duke-street, Adelphi, on the 25th March, Higford Burr, Esq., in the chair, when the second annual Report was presented by the Secretaries. The society now numbers 41 patrons and 24 life members, besides annual subscribers. The balance sheet for the year shows a balance at the banker's of 422*l.* 14*s.* 4*d.*, besides a sum of 150*l.* in hand for Chinese sheep. Through the kindness of his Grace the Duke of Newcastle, Her Majesty's Secretary to the Colonies, who is also one of the patrons of the society, the Governors of our Colonies throughout the world have been communicated with, with a view of enlisting their aid on behalf of the society. In consequence of this, relations of the most satisfactory character have been established with Queensland, Australia, New Brunswick, Prince Edward's Island, New Zealand, and South Africa. A gentleman residing at South Africa is also prepared to send supplies of the eland and other useful animals. During the past year, the society has imported Chinese sheep, which are recommended