A REVIEW OF THE PAST YEAR.

In engineering, the year just past can scarcely be said to have afforded much matter of interest; for beyond the progress made upon a number of important works of improvement, and the completion of a few others, there is but little to notice. The only specially novel engineering undertaking to record is the successful transfer of the Cleopatra Obelisk from Egypt to England—to its present site on the Thames embankment in London. The engineering skill is displayed in this work by the contractors has been highly praised by the leading professional journals of England, and appears to be deserved. The practical completion of the great Sutro tunnel was by all odds the most interesting and important performance in this department of the United States during the year. The improvements works at the mouth of the Mississippi do not appear to realize the sanguine expectations and predictions of their projector to the extent that his many warm advocates had hoped. It would, however, be premature to pass judgment at this time upon the merits of the controversy that is known to exist between Capt. Eads and the U. S. Engineering department, on which our readers are generally informed.

The partial completion and practical introduction of an elaborate system of elevated street railways, in New York city, is an event of special interest, and, though some serious objections have been found against them, their utility in solving the problem of rapid transit is generally admitted.

The canal across the American isthmus attracted considerable attention at the scientific congresses assembled in Paris during the late exposition, and the results of the several explorations, just made under the direction of the French naval officer, Lieut. Wyse, for a route across the Darien isthmus, enjoyed special prominence. The periodical sending out of expeditions to survey ground that has been already surveyed and resurveyed in the hope of finding some passage across this troublesome neck of land, that may, perchance, have escaped the observation of previous expeditions, might as well be stopped before the performance becomes farcical. Our own engineers have explored every ridge, valley, and stream along the whole isthmus from Panama to the Gulf of San Blas; and their reports, which are full and exhaustive, fully confirm Trautwine's conclusions, that a canal across the isthmus at the narrowest point, from the Gulf of San Miguel to the Gulf of San Blas, with a tunnel of 10 miles in length, at a cost of $300,000,000, is the best that can be done in a region where nature has interposed so many obstacles. Whether so stupendous a work will ever be undertaken by private capital and enterprise may well be doubted, and the prediction may, we believe, be safely made that the inter-oceanic canal across the American isthmus, if ever accomplished, will be done by the united efforts of the leading commercial nations of the world, in the interest of the world's commerce and of civilization. *Verbum sap.*

The Cape Cod ship canal, a project that has been periodically agitated for a century and a half, found an able champion, last year, in Mr. Clemens Herschell; and several schemes for the construction of a direct water-way across the peninsula of Florida were brought forward more or less prominently.

Regarding the Channel tunnel to connect England and France, the reclamation of the Zuyder Zee, and the flooding of the Sahara, brilliant projects that have attracted more or less attention on the part of the engineering world for several years past, nothing has been done beyond the regular amount of discussion. The St. Gothard tunnel, the greatest engineering work at present under way in Europe, met with a serious set-back, last year, by the refusal of the Swiss cantons to vote the surplus of subsidy which the unforeseen expensiveness of the work has rendered it necessary to provide. The difficulty, however, appears to have been satisfactorily adjusted.

In mechanics, we have nothing of special importance to report to the credit of the past year. —*Engineering and Mining Journal.*

THE MORNING COUGH.—The mucous rheum which calls out the morning cough is due to the changes of temperature to which the living membrane of the air passages is exposed in cold and stormy weather. People pass rapidly from in-door to out-door temperatures, and then changes in the vascular supply of the mucous membrane of the air passages are set up. If everybody at all times only breathed through the nose, the inspired air would be warmed by passing over the coils of blood-heated plates which exist in the nose for that purpose, and would not affect the air passages behind the turbinated bones. But such is not the case; they probably commence to talk, and in doing so draw in by the mouth cold air, which, on mixing with the residual air in the chest, lowers its temperature, and then a fluxionary hyperæmia follows, and after it, in its train, a mucous rheum. The best plan for persons who are subject to colds and coughs to adopt, is to keep their mouths closed; talk as little as possible, and avoid stopping or standing still. If one out of doors keeps moving, and with his mouth constantly closed, there is very little danger of taking cold or contracting a catarrh.

PURE AIR.—Pure air is an essential of pure blood. Pure blood makes stout nerves; consequently pure air which makes the good blood is an essential of the nervous system. Good nerves insure good digestion; therefore pure air, which through the blood makes the nerves good, is an essential of the digestive functions. Good digestion makes good blood, which brings us to our starting point, and proves that pure air is the first element in animal existence. From the cradle to the grave we breathe every moment, during working and sleeping hours. Pure living air therefore we require every instant. Bad air is a blood poisoner. Air once passed through the lungs is poisonous. It is not only deprived of its living and life-giving constituents, but it is loaded with impurities, especially when expired by unhealthy subjects. Fever malaria comes always from poisoned air. There may be no worse poison than the poison emanating from the skins and lungs of a mass of human beings. If therefore you would escape "blood-poisoning" have constant free ventilation.

VEGETABLE CARBON.—The carbon contained in beans, peas, cornmeal, oatmeal, and other farinaces is of a different character essentially from that which exists in animal fat. The chemist may not find a difference in his last analysis, so far as the elements are concerned, but the dietetic effects are different positively. One may eat largely of vegetable food without the resultant functional derangement which is induced by eating largely of animal fat, notwithstanding that the quantity of carbon may be actually greater by analysis in the vegetable food. No kind of food will supply the loss of bones. Eat good, nourishing food when suffering from any local disturbance, like a felon or boil; but avoid oils, fats, grease, and alcoholic stimulants. Eat fruit liberally, so that the blood shall be kept cool and the digestive function in good order.—*Phrenological Journal.*

RAISING ROSES FROM SEED.—To raise roses from seed, take the seed when fully ripe, separate them from the pulp, mix them with moist sand, put them in a little box or flower pot, and then place them in the cellar, taking care that they are kept moist all winter. In the spring sow sand and all in a common hot-bed, and when the plants are about an inch high transplant them into light, rich soil, shading them till well rooted.

ROSE HEDGE.

Take for instance the beautiful hybrid perpetual roses. Out of the many hundreds of varieties many could be selected that would form a really ornamental hedge, while "the girls" would certainly have a good chance to make rose bouquets. A hedge of roses would attract attention of every one passing by. The whole lawn would have a lively look. But what beyond the rose hedge? Grapevines, I say. Why could not you and your neighbor have a good hedge of vines as well as roses? Both the vines and the bushes will stand pruning. Both are ornamental and useful. And here I would remark that, in my judgment, in many fine places, there is too much space devoted to lawns. I have actually seen places where every tree and shrub was cut down to make a lawn, just because an extensive lawn was the prevailing rage. There stands the house isolated, and all you can see in the background is the post for the clothes-line. Now for a rose-hedge you may choose either "John Hopper" or "General Washington," "Madam Lafay" or "Pius IX.," or any other. For any ornamental hedge of vines I should take the Delaware; its foliage is graceful, and its growth is just rank enough, while it is very hardy. For a wild hedge, on which you do not mean to bestow any care, take the Clinton. If you want good grapes at the same time, and wish to keep it in trim, Rogers No. 4, 15, or Salem, are good. I would also recommend the Brighton, with its fresh and beautiful green.—*E. E. Ellwanger, in Fruit Recorder.*

FERNS FROM SEED.—A good authority says on this subject: Use shallow pans, filled one-third full of broken crockery for drainage; fill one pan to the top with a mixture of fine peat and silver sand, water it with a fine sprinkler, and it is ready to receive the seed. Next take a ripe frond containing the seed, and pass the hand over it as you hold it over the pan, until you can see the fine dust fall, which is the seed itself; when you have scattered it well over the surface, cover with a bell glass and place in a dark but warm spot. Keep moist, but never drench with water, and by and by you will perceive a little film of green upon the top, and next a little mossy growth, out of which tiny fern fronds will come forth. But you must not hurry or disturb their tender growth; a year is not too long to let them stay in the seed-pan, and by that time they will have learned to do without the bell glass and may be safely transplanted into little pots. Keep them constantly moist, but never wet, for no ferns like to have wet feet. Even in the woods and by the brookside, where the air is damp and the soil spongy, the fern is sure to keep clear of the water. We have often adapted for a seedling bed a raisin box filled half full of compost, settled well by two or three thumps on the ground; then we have sowed the seed as above described, fitted a pane of glass over the top, and placed it in a dark corner in the hot-house until the plants become sufficiently strong to be potted. This plan has always worked well.

HEALTH AND HAPPINESS.—One of the most important means of securing and retaining good health, is to live happily. Some one has beautifully said: Live in the sunshine at home, although clouds of perplexity environ you in the business marts. Bring smiles into the realm where so much heart service is expended for your comfort. Be a welcome presence to the smallest child, even to the very house dog, to pass upon the rug. A beneficent and loving spirit diffuses its influence from the highest to the lowest. Enter the home as you would some pleasant, safe retreat, where love and peace await you, leaving behind all that annoys and worries and disturbs you outside. As before marriage you always revealed your better self alone to the eyes of the beloved, so continue to be that higher self throughout.