

42 lbs. to a crushing force, and 54 lbs. per inch superficial to a force tending to make the particles slide upon one another. A common way of comparing the strength of different mortars is to stick bricks one against another on the *side* of a wall, and see how many will be supported by the mortar before it tears apart. Large and expensive buildings and works requiring lime will no doubt be required all along the line of the Halifax and Quebec Railroad, and in which the best materials ought to be used; and persons having limestone on their properties in the supposed vicinity of the railroad, cannot do better than have their limes analysed, for those which are really good will be sure to fetch a good price. This naturally leads me to think of the engineers and other scientific men who will be employed upon that line, and some of whom we may shortly expect to see located in this neighbourhood; and I would suggest that we make them honorary members of our society, and ask them to favor us with lectures upon the different branches of their profession. How interesting it would be to have models of bridges commented upon, and particularly those lately invented, made of 'tubular iron,' and shewing their powers of resisting forces applied either by a crushing or tearing asunder strain. A cylinder of iron is the strongest form into which to employ that metal with the least weight of material; and though nature has shewn it to be so from the earliest ages in the stems of grains, grasses, &c., yet it is only latterly that man has adopted it in the gigantic undertakings of Britain. They might also elucidate the advantage of having moveable axles upon the waggons to enable them to go round curves of small radius in safety, for the generally received opinion that the same object is obtained by having the tires of the wheels of conical form is an error; as may be easily shewn by a carriage having wheels fixed on the axles so that the axles revolve with them, and if at the same time the axles be fixed *square* with the carriage, *such a carriage will be found to be incapable of moving in a curve notwithstanding the inequality of the wheels.*

The Doctor might give us a course of lectures upon 'Health,' which would be of advantage to all, and I trust more particularly interesting to the ladies, as on them devolves the duty of providing for the sustenance of man. 'What is sauce for the goose is sauce for the gander,' is not true in practice, and all stomachs have not the same digestive powers. The greatest per centage of nourishment is contained in a *nut*, which is almost entirely composed of oil; while a potatoe has eighty-eight parts of wasted matter to twelve of nutriment; yet the latter imparts far more nourishment than the former. The gases hydrogen, oxygen, and nitrogen, would any one of them destroy human life, and even when the two last are mixed in the atmosphere they will not support life in that form. We may mix them in various ways and not be more successful. Carbon combines with oxygen to form carbonic acid, hydrogen combines with nitrogen to form ammonia, and these two compounds unite together to form common smelling salts; but common smelling salts though they con-