towns and villages—many of them handsome, and not a few of them large and wealthy. The growth of a number of these-among them To-roeto, Hamilton, Dundas, Brantford, London, Guelph, Belleville, Brockville, Kingston -- was viewed—their present population and that of earlier periods being given. Examples of the rise of property in some of these towns were likewise given. In its trade, the growth of Upper Canada is, as proved by the comparison of the exports and imports of different periods, quite equal to its advance in other respects. Great progress has also been made in regard to the conveniences of life, as was manifested by a comparison of means of conveyance - steamboats and roads at different periods; with the increase of postal arrangements and the facilities afforded by electric telegraph.

By a comparison of statistical returns, it was shown that in proportion to population our inincrease from imigration is one third greater than that of the United States, which with a population fifteen times ours, receives only an immigration only ten times ours. In proportion to our population, our increase from immigration between 1820 and 1850 has been five times that of the United States.

Lecture second was devoted to the growth of Upper Canada in its higher interests, those of an intellectual and spiritual character. In 1812, Canada had five newspapers, all in the lower Province. Now it cannot have much under two hundred. One hundred and eighty, or a little above, would give us, in proportion to population a supply equal to that of the United States, which has about 2500. Generally speaking our newspapers will compare favourably with those of our neighbors as to character. The number of our neighbors as to character. of our book-shops with the extent of their stocks and the books stowed in libraries and found on tables, indicate a growing taste for reading.

On all hands a growing interest is manifested in the subject of education. Our schools, and school-masters and pupils are increasing rapidly. Sums largely increased are being paid for education; the people in many parts voluntarily taxing themselves for its support. The character of the education given is also improved. Ir numbers of places, too, larger schools are being introduced with a number of qualified teachers, which admit of preper classification of pupils and division of labour on the part of masters. Schools of this sort have been seen by the lecturer in successful operation in Brantford and London. The Normal School is rendering the country great service; as is also the Chief Superintendent of Common Schools, by the diligence, singleness of purpose and industry with which he is devoting aimself to his noble employment. The number of grammar schools is also increasing, and the number of Mechanics' Institutes. Now, too, the Provincial University with its staff of well qualified Profesfors, to which addition is being made, offers its advantages to the youth of the country at a price little more than nominal. Trinity College, likewise, though a denominational institution, adds to the means of education in the higher departments. It is a fact specially cheering that the | true philosophy of shelter consists.

means of religious instruction and worship are increasing at a rate fully equal to the growth of the population. This was shown by comparison of the statistical returns of different periods. In civil arrangements and the application of correct principles to the government of the country, it is believed improvement will generally be admitted to be taking place. Our municipal institutions are working, on the whole, satisfactorily-improving the country and educating the people .--The past growth of the country, with its extent, its soil and climate, and the facilities for intercommunication afforded by its rivers and lakes, were next adverted to. Those, he said, in connection with the character of its inhabitants, who were vindicated from the imputation of want of enterprise, afforded pledges of the future great-ness of the country. The lecture closed with an ness of the country. The lecture closed with an exhortation to Canadians to do their duty towards the development of the resources of the country.

HORTICULTURE.

THE SCIENCE AND PRINCIPLES OF GAR-DENING.

No. 3.

THE AGENTS WHICH AFFECT PLANTS.

Before ever sap can be extracted from the soil, or set in motion afterwards, it must be acted upon by heat, which is the prime agent in promoting the growth of plants. It is present both in the soil and in the air, and is everywhere diffused. In proportion to its prevalence, (other conditions bring available,) the growth of plants will be either rapid or extensive, or the contrary. This accounts for the comparative dormancy of plants in winter or cold weather. The suspension of the flow of sap at the beginning of winter is erroneously ascribed to the descent of the sap at that season, when, in fact, it is solely occa-sioned by the absence of a sufficient degree of light and heat. If these and moisture were duly present, perpetual growth would be the result, as it is, except during the dry season, in tropical climates.

Heat is distributed pretty equally among all things on the earth's surface, by a process somewhat similar to that of water, always finding its level, and which is termed radiation. Thus, it will invariably pass from a warm substance to one near it which is colder and all the more rapidly, if the two things are porous and in contact. The warm ground, for instance, will give off its heat into the air, till the heat of the ground, and that of the air become equalized ; but the air will not communicate its heat so readily to the ground, as it is a property of heat to be continually ascending, and passing off into space.

As plants derive their food mainly from the soil, its heat should be in some measure correspondent to that of the atmosphere, or they will increase in length but not in strength. This is one reason why cold wet soils are generally unsuitable. The roots do not grow in proportion to the branches and leaves.

Cold is mercly a state in which, by the process of radiation, heat is absent. Plants always possess a certain proportion of heat, which is necessary to their vitality; and soils are in winter usually warmer than the air. It is in preventing this heat from flying off into the air, and not in imparting fresh heat, that the