the preparation of gas. From the fire clay are manufactured fire brick and gas retorts ; and the sandstone furnishes an inexhaustible store of substantial and beautiful material for building.

These several deposits contain in abundance the impres­sions of the vegetables which distinguish the carboniferous period ; and, what is remarkable, the remains of animals, the same as occur in the Burdie-house limestone, are found in the shales, and even in the coal itself. In the island, no strata newer than the carboniferous system is known to ex­ist. All is covered over with accumulations of clay, gravel, sand, and soil.

Until after the middle of last century’ there was scarcely a good road in Scotland. Soon after the rebellion of 1715, Government began to open up the country by roads made by the military, hence called military roads, which extended in all about eight hundred miles ; but these being confined for the most part to the Highlands, intended for military purposes, and formed with little or no regard to such ascents and descents as do not impede the passage of an army, were of little advantage in an economical point of view. It is in the recollection of persons still living, when corn, coals, and other heavy articles, were usually carried upon the backs of horses, even in the southern counties of Scotland; the roads, or rather the tracks, being for the greater part of the year unfit for wheel-carriages. But so great a change has been made in this respect, particularly within the last forty years, that mail-coaches, and other carriages, now run day and night at the rate of from eight to ten miles an hour through every part of the country, from the borders of Eng­land to the northern extremity of Great Britain.

The only funds formerly applicable to the making and the repairing of the roads in Scotland were what is called the Statute Labour, or the labour of the occupiers of the land, for six days annually, upon the roads passing through their respective parishes, and a small assessment imposed upon the proprietors. This labbur, which has been con­verted into payment in money, and also the sums raised by assessment on the proprietors, under the name of road and bridge money, are now applied to bye-roads, or such as com­municate with the great turnpikes. Almost every county has procured an act of Parliament which fixes the rate of these assessments; but this varies in different counties ac­cording to circumstances.

The turnpike roads and bridges in the Lowlands have, for nearly a century, been made, and are kept in repair by means of tolls exacted from those who use them, under the authority of private acts of Parliament. The first of these acts was obtained in 1750, at which time the roads were so bad that the journey from Edinburgh to Glasgow, a distance of forty-two miles, occupied 11/2 days, whereas it is now ef­fected in from 41/2 to 5 hours. The trustees named in these acts are commonly empowered, whether wisely or not, to borrow money upon the security of the funds to be received ; by which means the work is more speedily executed. The board of trustees consists of the sheriff-depute, his substi­tute, and the justices of the peace in the county, together with all individuals, and their eldest sons, who are owners of estates worth L.100 Scotch a-year, and upwards, of va­lued rent. The result of this is, that “ in consequence of the excellent materials which abound in all parts of Scot­land, and of the greater skill and science of Scotch trustees and surveyors, the turnpike roads in Scotland are superior to those in England.”@@1

In the Highlands, the nature of the country, and the state of the population, did not admit of the same system as in the Lowlands. The military roads had not only been

made, but were kept in repair at the public expense, for which L.5000 a-year was usually granted by Parliament; but a great many new roads and bridges were required; and, in 1803, an act was passed, proceeding upon “ a sur­vey and report of the coasts and central Highlands of Scot­land,” by which Parliament agreed to provide half the esti­mated expense of the necessary roads and bridges, the other half to be defrayed by the landed proprietors; and Commis­sioners were named to carry into effect the beneficent in­tentions of the Legislature. It appears from the report just referred to, that, under this act, the Commissioners had, in 1821, expended, on 875 miles of road, and several large bridges, upwards of L.450,000, of which L.240,000 was granted by Parliament, and the rest defrayed by the coun­ties through which the roads passed; and that L.100,000 more had been laid out by them upon harbours, of which L.50,000 was paid out of the funds arising from the for­feited estates in Scotland, and the remainder raised by the burghs, and by the contributions of individuals. If, to these sums, we add the amount of the losses sustained by the contractors, as stated in the Report, and the expense of the new roads made at the sole cost of the proprietors, to communicate with the Parliamentary roads, together with the charges of repairs, the whole amount expended within these twenty years upon the roads, bridges, and har­bours of the Highlands of Scotland, may not be too highly stated at a million sterling. The Commissioners have un­der their charge both the maintaining of their own roads, and part of the military roads, the extent of the whole in 1821 being 1183 miles; and about L.10,000 a-year, of which L.5000 is granted by Parliament, was considered to be ne­cessary for this purpose, including all charges of manage­ment.@@2 The military roads have been in many instances al­lowed to fall into disrepair ; but nearly three hundred miles of them are still kept up.

*Summary Statement as to the Turnpike Roads in Scotland in* 1829.@@3

Length of turnpike roads 3,666 miles.

Number of turnpike trusts.. 190 Acts of Parliament, 391

Debt L 1,495,082

Income from all sources 167,584

Expenditure 181,028

Excess of income over

expenditure 6,556

The Caledonian Canal, the greatest work of the kind ever attempted in Great Britain, stretches south-west and north­east across the island, from a point near Inverness to Fort- William, a distance of 601/2 miles, including Lochs Ness, Oich, and Lochy, by which nearly two-thirds of it are formed. The excavated or artificial part is tw,enty-three miles; and there are in all twenty locks. The depth in some places is only seventeen feet, but it was originally meant to be twenty. As it is, however, frigates of 32 guns, and merchant ships of 1000 tons can pass through it. It is 50 feet wide at the bottom, and 122 at top. But with all its magnificence, it has been found to be an improvident speculation. The total cost of the canal, up to 1822, when it was opened, was L.905,258; and the aggregate outlay to the first of May 1839, was no less than L.1,023,628. Besides, the Commissioners have incurred a debt, including cash advanced by the bank, and outstanding claims, of L.39,146. Nor has the income ever met the expenditure. In the year ending on the first of May 1839, for example, the expenditure was L.4170, whereas the income, though above the average, was only L.2532. It has, therefore, become a question with government whether the undertaking should be maintained or abandoned. The Lords of the Treasury, accordingly, em-

@@@, Sir H. Parnell's Treatise on Ronds, p. 313.

@@@\* Anderson’s Guide to the Highlands, &c. p. 6. Ninth Report of the Commissioners for Highland Roads and Bridges.

@@@s Parliamentary Papers, No. 703, 1833, p. 176.