

Test.—Ferric chloride gives a fine dark purple colour to a solution of any of the sulpho-carbolates.

Dr. Sansom, of England, who has used these salts largely, does not find them to be very strongly antiseptic, being, in his opinion, less powerful than carbolic acid. He finds half a grain of carbolic acid to be equal to twenty grains of sodium sulpho-carbolate in the prevention of fermentation. From this, it would appear, that the acid loses considerably in power by combination with the base, in the destruction of vegetable cells. The important characteristics of these salts are, that they can be administered without difficulty or danger, the carbolic acid being evolved in their passage throughout the system, and thus producing its beneficial effects.

When sodium sulpho-carbolate has been administered to an animal, sodium sulphate is found in the urine and tissues, while carbolic acid escapes with the breath. The flesh of the animal resists post mortem putrefaction.

Zinc sulpho-carbolate is recommended by Dr. Wood, of England, as an external application, in the form of a lotion of 3 to 10 grains to an ounce of water. Its effect on suppurating surfaces is said to be marked by the arrest of pus formation and absence of all fetor; and while it contains the disinfectant and therapeutical virtues of carbolic acid, together with the astringent qualities of zinc sulphate, its action is not marked by any irritating properties or disagreeable odour.

The substance known by the name of carbolic acid has also received several other designations, viz.:—Phenol, phenic acid, hydrate of phenyl, phenylic alcohol, coal tar creasote; and the compounds above referred to are known under the names of sulpho-phenisates, sulpho-phenylates, sulpho-carbolates, sulpho-phenates and phenyl sulphates.

VITAL STATISTICS.

(Communicated.)

The *Edinburgh Medical Journal* contains a paper on the general mortality of the town and rural districts of Scotland, read by Dr. James Stark, F. R. S. E., before the British Association at Exeter, 21st August, 1869, based on

the census of 1861, and Reports of the Registrar-General of Scotland, in which will be found much of interest in relation to marriages, births and deaths in that part of the British Isles, as it is "believed that nearly every birth, death and marriage which occurs in that country is entered on the Register."

An average of the mortality for ten years shews that it is greater by one-third in towns than in the country, the numbers being for towns 27 in 1,000 as against 16 and 17 among insular and mainland rural people. But towns vary much in size, and are found to have large rates of mortality in proportion to density of population. Dividing the towns of Scotland into the three classes of:—principal towns, with a population of 25,000 and upwards; large towns, with a population varying from 10,000 to 25,000, and small towns with a population of from 3,000 to 10,000 inhabitants, the remaining portions of the people may be regarded as living in rural districts. In the first of these town districts the deaths to 1,000 of population average 28.25; in the 2nd group, 24.57; in the small towns 21.24, and in the rural districts 16.95. So, the mortality is not only greater in the rural than in the rural districts, but it is found to be greater in towns and cities themselves, in proportion to density of population. The lamp of life burns out more quickly in proportion to the greatness of the mass of human beings congregated together. But the law of supply and demand holds true, and human life affords no exception, for, in proportion to density of population and high death rate, is there a greater demand for more human life, and we find a corresponding increase in marriages and births. In every 1,000 in the principal towns with 28 deaths, the marriages and births are 8, and 38.73. The large towns have respectively 24.57 deaths, 7.95 marriages and 38.07 births. Small towns furnish 21.24 deaths, 6.89 marriages and 36.44 births. The rest of Scotland (rural districts), with low death rate of 16.95 had also the low proportion of 5.63 marriages and 31.49 births. An important law of nature is thereby arrived at, namely, that the number of births and marriages as well as deaths, is highest among dense populations, and a key to the correctness of the statistics from