When Xerxes arrived at Thermopylæ, his land and sea forces amounted to 2,614,610, exclusive of servants, eunuchs, women, sutlers, etc., in all numbering 5,283,220. (So say Herodotus, Plutarch, and Isocrates.)

The army of Artaxerxes, before the battle of Cunaxa, amounted to about 1,200,000 men.

Ten thousand horse and 100,000 foot soldiers fell on the fatal field of Issus.

Miscellaneous.

Benzine and Benzole.

A New York correspondent, O. H. K., requests us to point out the difference between benzine and benzole.

There are 68 elementary substances at present known, and these combine with each other in various ways to form all of the thousands of substances which exist on this earth. The compound substances are generally entirely different in their properties from the elements which unite to form them. For instance, nitrogen and oxygen are mechanically mingled together to constitute the air we breathe, but if these same elements are chemically combined in certain proportions they become nitric acid, a liquid of such corrosive power that if a single spoonful was introduced into the lungs of any person it would burn them to cinder.

Most of these elements combine together in only a very few proportions. For instance, carbon and oxygen in only two, one atom of carbon combining with one of oxygen to form carbonic oxide, and one atom of carbon combining with two atoms of oxygen to form carbonic acid. It is beyond the power of the chemist's art to induce these two elements to combine chemically without the presence of a third element, in any other proportions but these two. Hydrogen and oxygen also combine in only two proportions. One atom of hydrogen combines with one atom of oxygen to form water; and one atom of hydrogen combines with two atoms of oxygen to form the deutoxide of hydrogen, a sweet liquid wholly unlike water.

But carbon and hydrogen in their combinations with each other stand out as a remarkable exception to the general law. They combine in hundreds of different proportions, forming as many substances, each with its distinct and peculiar properties. There are several series of hydro-carbons, and the series which has been most studied is the coal tar series.

When bituminous coal is subjected to a high heat under shelter from contact with the air, it undergoes destructive distillation; it is decomposed and the elements of which it is constituted enter into new combinations, to form new substances. The kinds of substances formed vary with the temperature at which the destructive distillation takes place. At a bright cherry red are formed the hydro-carbons which mechanically mixed constitute illuminating gas and coal tar. Some of these are so volatile as to retain the gaseous form at ordinary temperatures, and all of the others are condensed in the form of tar by passing the vapors from the retort through cold water. Among the most volatile of the coal-tar hydro-carbons is benzole. This substance has the property of crystalizing at a temperature of 32°, and can therefore be easily separated from the mixture. It is a very volatile liquid, and is a powerful solvent of gums, oils and resins. This property adapts it for use in making varnishes. It is from benzole that the coal tar dyes are made. By treatment with nitric acid and nascent hydrogen, it is converted into aniline, which by oxidation is changed to magenta, solferino, and the others of these brilliant and beautiful colors.

Petroleum consists of hydro-carbons, only two or three of which have yet been separated from the mixture. It has recently been stated in England that a trace of benzole had been found in some specimens of petroleum, but other chemists have been unable to obtain it.

The benzine of our markets at the present time is merely the most volatile portion of petroleum. If it contains any benzole it is only a trace, and not enough to modify its properties. It is doubtless a mixture of various hydry-carbons, and varies in chemical composition and in its properties with the different wells from which it is produced. Its power of dissolving gums and resins is much inferior to that of benzole, and hence its unsuitableness for making varnishes. In the absence of benzole, of course no aniline, and therefore no aniline dyes can be made from it.—*Scientific American.*

Hard on the Hogs.

One of the most common causes of blood impurities is the use of pork. It has been said that all things were created for some wise purpose; but *hogs* were never made to eat. Christ only used them to drown the devils; they can never be of any other beneficent use. As an article of diet, pork exerts a most pernicious influence on the blood, overloading it with carbonic gas, and filling it with scrofula. The hog is not a healthy animal. From its birth it is an inveterate gormandizer—and to satisfy its eternal cravings for food, everything in field or gutter, however filthy, finds a lodgment in its capacious stomach. It eats filth, wallows in filth, and is itself but a living mass of filth. Our bodies are made up of the things that have been picked up from our plates. The humoral properties and inflammatory effect which pork imparts to the blood, tend to germinate vermin in the system. Grub in the liver, kidneys, lungs, and other organs frequently have their origin in the use of this filthy article of food. The *Gazette Medicale* asserts that "the tape-worm troubles only those who eat pork." It further remarks, that the Hebrews are never troubled with it, but the pork butchers are peculiarly liable to it, and that dogs fed upon it are universally so afflicted. In fact, it turns out that a small parasite worm, called "Crysticerons," which much effects pork, no sooner reaches the human stomach, than, from the change of diet and position, it is changed into the well-known tape-worm: and the experiments of M. Küchenmeister of Zottoria, made with great professional care upon an executed criminal, have established the fact beyond doubt. —*Medical Common-sense.*

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