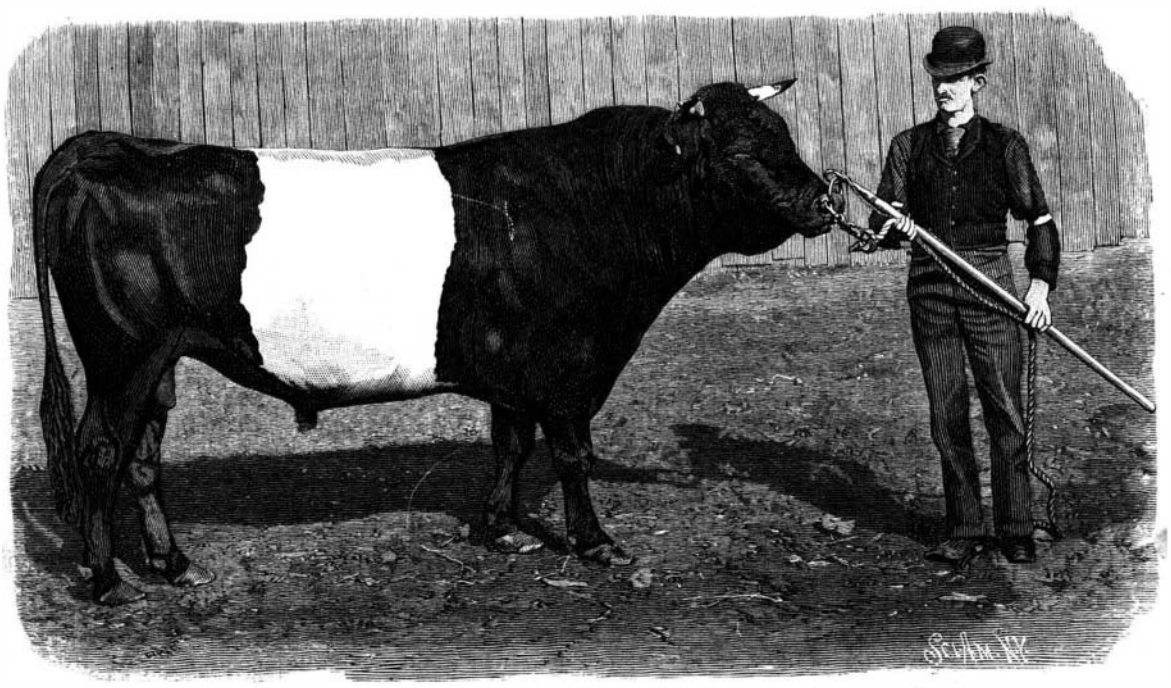
PRIZE CATTLE AT THE WORLD'S COLUMBIAN EXPOSITION.

Live stock forms an important display at the Fair and is interesting not only to the stock raiser but to the gentleman farmer as well. The huge live stock pavilion is crowded during the judging. Stock breeders from the various parts of the country went to Chicago when the Exposition authorities announced that there would be an exhibit of registered stock only. There were two thousand entries in some of the classes and it is safe to say that the exhibition contains representative stock from nearly all parts of the civilized world. The greatest part of the stock exhibited is of domestic origin, and is furnished both by stock breeders and the owners of fine cattle who are in many cases members of cattle associations. Probably the most interesting cattle on exhibition are the Holsteins and the Dutch belted cattle. The Dutch belted cattle are of medium size, fine boned, compact and well built. In color they are black, with a continuous white belt around the body, the white being pure white, the black jet making a beautiful contrast. This type and color were established by scientific breeding. They are controlled by the nobility in their native country, and present a novel feature in the landscape, grazing in the lowlands of Holland. In weight the cows vary from eight to twelve hundred pounds and the bulls reach sixteen to twenty hundred. The calves produced are usually of large size. The Dutch belted cattle should not be confounded with the Holsteins, which belong to a distinct family. The Dutch Belted Cattle Association will give a medal to all winners of prizes at the Columbian Exposition for standard bred Dutch belted cattle. We illustrate two of the prize winners, a Holstein and a fine example of Dutch belted bull.



PRIZE DUTCH BELTED BULL AT THE WORLD'S COLUMBIAN EXPOSITION.

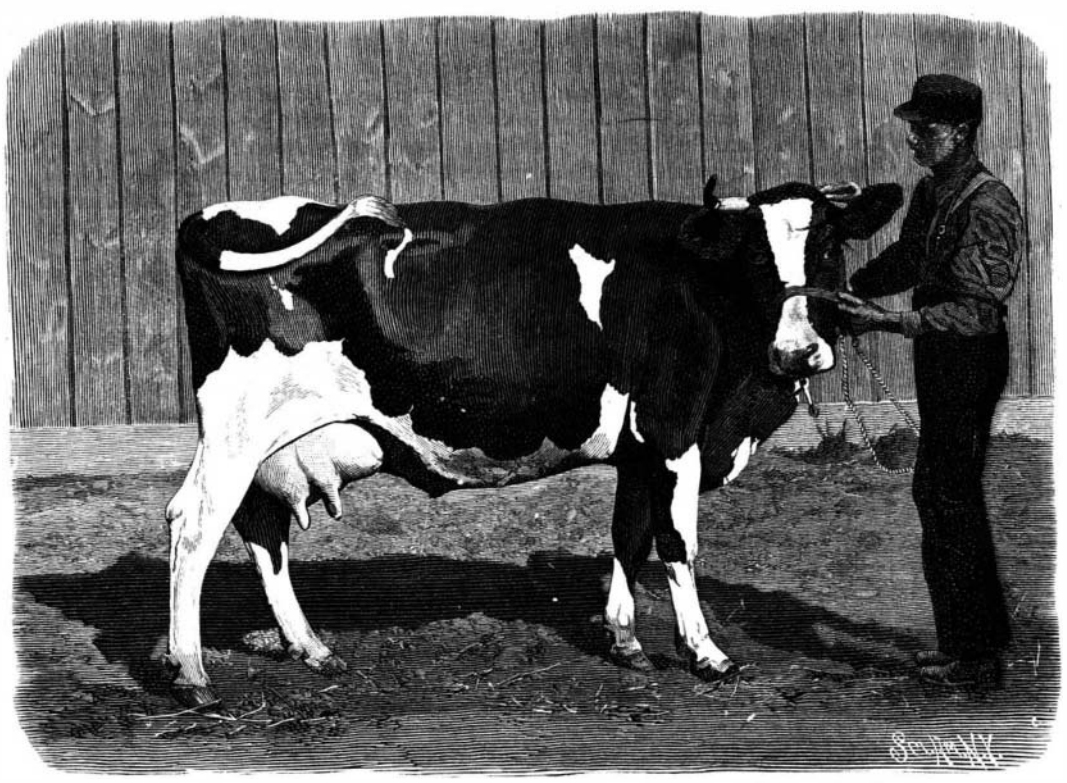
Thiocamf.

Duffey (*Dublin Journal of Medical Science*, May, 1893) has been led to use thiocamf asan intestinal antiseptic, a surgical application, and an antiparasitic in cutaneous affections. His communication has already been briefly alluded to in this journal. Thiocamf is described by Professor Emerson Reynolds, its discoverer, as a "liquid which results when sulphur dioxide gas is brought in contact with camphor." In this liquid are dissolved several substances destructive of bacteria, among them benzoic acid and phellandrene. Thiocamf can be preserved without pressure in bottles at ordinary temperatures, but on its exposure in thin layers a steady evolution of large volumes of sulphur dioxide gas, charged with the vapors of other disinfectants, takes place. From this action it has been much used for atmospheric disinfection, and, forthe same reason, Duffey has applied it to the uses noted. For internal administration it was combined with pure butter fat in the proportion of ten per cent of thiocamf. Of this, ten grains were given in capsule every two or three hours for four doses. The capsules were sometimes coated with keratin, that they might pass through the stomach and be dissolved in the intestines.

The drug was thus used in a case of typhoid fever, in a case of phthisis in which the patient was suffering from pyrosis, in a case of dilatation of the stomach, and in a case of alcoholic peripheral neuritis in which the patient had fetid alvine evacuations. In all of these the signs of fermentation became less marked and the character of the movements improved. In two cases of scabies a four per cent solution in olive oil effected rapid cures. In bedsores and unhealthy ulcerations it was used in oily solution (four to six per cent) with the effect of quickly removing fetor, diminishing the discharge, and promoting healing. No ill effect was noted in any case.—*Medical Record.*

Chemical History of the Atmosphere.

In the *Chemical News* Dr. Phipson gives the chemical history of the atmosphere from its origin to the present day, in accordance with the results of his observations and experiments, particulars of which we have published from time to time. Premising that the matter composing the earth was originally in a gaseous condition at such a temperature that no compounds could exist, he assumes that, when a solid crust later covered an internal molten mass, water was condensed upon the surface and a primitive atmosphere of nitrogen surrounded the globe. Into this atmosphere large quantities of carbonic acid and water were evolved by volcanic action, bnt there was no free oxygen. Plants then made their appearance, and, in vegetating, evolved oxygen copiously, deriving this element from the carbonic acid supplied by volcanic action. When a certain proportion of oxygen was attained, animal life became possible, and duly appeared. At the same time the proportion of carbonic acid became less, the carbon being stored up as coal, peat, lignite, etc. As these processes proceeded animal life of higher order appeared, the development of the nervous system coinciding with the increase of oxygen in the air. As evidence that the composition of the atmosphere is still slowly changing, it is stated that the latest and most careful determinations of carbonic acid in the air have shown a decided decrease (0·05 to 0·03) in the last fifty years.



PRIZE HOLSTEIN COW AT THE WORLD'S COLUMBIAN EXPOSITION.

The Production of Prussic Acid from Sugar.

The conversion of an absolutely innocuous substance into one of a powerfully toxic nature by means of a series of simple chemical operations, though not a rare phenomenon, is well-illustrated in a reaction recently observed by three chemists--Messrs. Burls, Evans and Desch—in which prussic acid proved to be one of the products of the action of nitric acid upon sugar. It is well known that by acting upon sugar, sawdust or cellulose with nitric acid, oxalic acid in tolerable quantity is produced. In the course of such an experiment the chemists above named noticed the smell of prussic acid just after the first violence of the reaction had ceased and the evolution of nitrous fumes had diminished. Subsequent examination proved beyond doubt that prussic acid in considerable quantity was present in the liquid, and on submitting the liquid to distillation, prussic acid was found in the condensed products. A larger yield of the acid was obtained when the nitric acid was allowed to drop slowly into the sugar solution from a tap funnel. Caramel was acted upon similarly, although the quantity of prussic acid produced was less than before. The production of hydrocyanic acid would appear to be due to the reduction of the nitric acid to nitrous acid and to the action of this acid upon the carbon ensuing on the decomposition of the sugar. Finely divided carbon itself was found to give prussic acid on distillation after treatment with nitric acid, and the same result was obtained when cane sugar was acted upon by nitrous acid by submitting the sugar first to the action of nitrite of potassium and then acidulating with sulphuric acid. On this hypothesis the reaction may be thus represented: $2HNO_3 + C = 2HNO_2 + CO_2$ and $HNO_2 + 2C = HCN + CO_2$. This action is evidently of interest from a theoretical point of view, and only shows how we may be led astray in being content with the simplest explanation of certain phenomena. The text books give oxalic acid as the product of the action of nitric acid upon sugar, but now must be added the observation that hydrocyanic acid is a compound simultaneously produced.—*The Lancet.*

The Moon's Face.

Mr. Gilbert's address as retiring president of the Washington Philosophical Society is an ingenious array of arguments in favor of the impact theory to account for the origin of the features of the moon's face. His hypothesis is, that material constituting the moon once surrounded the earth in the form of a Saturnian ring; that the small bodies of this ring coalesced, first gathering around a large number of nuclei, and finally all uniting in a single sphere, the moon; that the lunar craters are the scars resulting from the collision of the moonlets.

This hypothesis reconciles the impact theory with the circular outline of the lunar craters and explains the abundance of colliding bodies of large magnitude. The author discusses the probabilities of the formation, according to his theory, of lunar wreaths, central hills, arched inner plains, level inner plains, and the association of inner plains with central hills. He finds his theory adequate to explain all these phenomena, as well as the peculiarities known as furrows, sculpture, rills and rill pits. In regard to the "white streaks" Mr. Gilbert quotes, as in accordance with his own idea, an unpublished suggestion made by Mr. William Wurdeman, that "a meteorite (moonlet) striking the moon with great force spattered whitish matter in various directions."

During the growth of the moon, many of the moonlets must have collided with the earth and formed impact craters which have been obliterated by erosion and sedimentation. It is possible, the writer suggests, that these collisions imitated not only the differentiation of continental and oceanic plateaus, but the series of geographic transformations of which geologic structure is the record. (Phil. Soc. Washington, Bull. vol. xii., 1893.)—*American Naturalist.*