

## THE HAMPSHIRE DOWNS.

We give on this page a portrait of a handsome ram of the Hampshire family of Downs. The Hampshire sheep are excellent illustrations of what can be accomplished by skillful breeding for a certain style of animal. The Hampshires were brought out upon the idea of more meat in a shorter period of time—the same which originated the Leicester—by admirers of the Southdown style, who saw in the size and the early maturity of the Wiltshire horned sheep and the Berkshire Nott, qualities forming an admirable foundation for a breed upon which the fine form and superior quality of flesh of the Down could be grafted. It is worthy of notice that a breed which has long displaced the original Sussex Down and other breeds in Berkshire, Hants, Wilts and Dorset, has been made

## WHERE DOES COAL OIL COME FROM?

This is one of the questions that has long agitated the scientific world, and upon the answer to it more depends than seems to at first sight. If we know its source we can fairly determine as to the nature and extent of the supplies, and as to where to look for them. The *Scientific American* says: Some have thought that the oils have been produced by a slow distillation during the process of coal formation. A fatal objection, however, to this theory is found in the fact that Great Britain, which has immense coal beds, contains nothing of the kind, though supposed traces have been found here and there.

The silurian and devonian rocks, which contain the sources of most of the oil wells now in existence, have great quantities of fossil remains, and this has suggested the theory that the oils have resulted from their decomposition.

The subject is one well worthy the attention of all interested in oil wells.

**NEW METHOD OF CONSUMING SMOKE.**—It is well known that the cause of smoke is that the fresh air, entering the incandescent coal from below through the grate, has often all its oxygen consumed before it has passed half way through the layer of coal, so that the upper part of the layer cannot burn, but is simply heated by the underlying incandescent coal, while the products of the combustion of the lower layer of burning coal pass through the upper heated but not burning layer, and carry with them the combustible gases evolved by the heat, but which cannot take fire from the want of free oxygen. In order to furnish these combustible gases ascending through the upper layer of coal with the necessary oxygen to burn, Mr. Benjamin F. Sherman, of Ballston, Spa., N. Y., has devised a means of introducing air in the furnace with a downward injection upon the fire by a



RAM OF THE HAMPSHIRE FAMILY OF DOWNS SHEEP.

what it is, in the hands of skillful breeders, by the blood of the finest specimens of the race which they now dominate in all that section. This change is a natural result of the inclosure of the commons, the introduction of artificial manures, and the production of such crops as turnips, rape, vetches, trifolium, rye and Italian rye-grass. This is one of the facts with which the history of British sheep-husbandry teems, illustrating the necessity of change in breeds, with changed conditions of production or consumption. It is estimated that the weight, both of mutton and wool, has been increased in that region 50%. The statistics of 10,000 Hampshires for three successive years showed the average yield of lambs to be 91%, the mortality of ewes 5½%, and of tegs 3%, per annum. The wool is of fine quality, but short staple, averaging 4½ pounds per fleece.

**EFFECT OF WATER PRESSURE.**—The pressure of water on the main reservoir pipe in Lansingburg, N. Y., was recently so great that it forced off the main valve, which weighed a ton, and threw it 50 ft. The water that followed rose 150 ft., struck the embankment of the Troy & Boston railroad, and washed away 25 ft.

Prof. Mendeljeff thinks that on the first formation of the earth vast reservoirs of inorganic iron and carbon existed in the interior of the globe. These were reached by the water condensing on the newly formed land and percolating beneath its surface. The heat decomposed the water into its component parts, oxygen and hydrogen, the first forming with the iron oxide of iron, the latter with the carbon petroleum and other hydro-carbons. If this theory be the correct one, there still exist in the center of the earth reservoirs of petroleum that are to the sources as yet known as the ocean is to the spring, whose waters finally find a resting place in its bosom.

Dr. T. Sterry Hunt, of Massachusetts, propounded in 1861 a theory to which he still adheres. He thinks that many of the animated beings of early ages were half vegetable, half animal, and that the decomposition of their tissues produced what is known as mineral oil. Certain magnetic ooliferous limestones have been found to contain 4½% of their bulk of petroleum. A square mile of these 35 ft. thick would yield nearly 8,000,000 barrels, and as the area of these rocks is very great, they may contain supplies calculated to last an indefinite period of time.

vertically adjustable arrangement of pipes, which may be placed close to the coals or further from them, according to the requirement of the case.

**LAUNCHING A BRIDGE.**—In constructing a railroad bridge over the river Rance, at Dinard, in France, the engineer decided to build the bridge on the shore and launch it over the river. The bridge weighed, when it was complete, 2,600,000 pounds, its height above the river was 100 ft., and the span 314 ft. Twelve windlasses were used to draw the bridge into its place. It was supposed that four or five days would be sufficient for the work, but, in consequence of the breaking of a chain, two weeks were required.

**"BONSILATE."**—A new industry is reported to be growing up in Newark, N. J., which yields a product suitable for a great many purposes. "Bonsilate" is the name given to this substance, which it is claimed, will take the place of ivory, rubber, celluloid and similar materials. It is said to be composed chiefly of finely ground bone, agglutinated by some cementing compound, which, when in its plastic state, can be molded into shape.