with the small number of really good young bulls to be met with. The number of youngsters advertised for sale just now in the different local and national papers is very great, and yet how few "*gentlemen*" will appear amongst them—"*gentlemen*" that can stand out from that common rank with the wealth and style that at once marks them as above the average. It is the common cry that Short-horn breeding does not pay—and I question if breeding the commoner sort does pay—but let those who have gone in for good sorts be encouraged by the thought that good youngsters—"*gentlemen*," as I have called them—will every year leave their commoner brethren further in the rear.—*N. B. Ayriculturist.*

Shorthorn Breeding.

CONDUCTED AS A SCIENCE, WITH A VIEW TO MAINTAINING THE HIGHEST EXCELLENCE IN USEFUL QUALITIES.

[Address delivered by Judge T. C. Jones before the American Shorthorn Breeders' Convention, at Toronto.]

If I supposed, Mr. President, that the only object of this meeting was to consult in regard to the best method of promoting the immediate pecuniary interests of breeders and dealers in thorough bred cattle, or that this was our chief purpose, I should not trouble the delegates to listen to the observations I have prepared. But I trust, sir, that the matter of pecuniary profit, important as it is, in the prosecution of this, as of other business pursuits, has not been as influential in originating this organization or in attracting the delegates to its annual meetings, as the great interest we feel in this fascinating pursuit, on account of the opportunity it affords of rendering a service to the public, by adding to the food-producing value of this important species of domestic animals. I therefore proceed to address myself, not only to the understanding of the delegates assembled to represent this great interest, but also to their patriotism as public spirited citizens, ever anxious to promote the general welfare. When I speak of the art of breeding being conducted as a science, I mean that our practice should be governed by a proper understanding of those general principles that have been tested as applicable to the subject, by the deductions of animal physiologists, or the experience of practical breeders; in other words, that our proceedings should be based upon knowledge. For science, in a broad sense, means to know, and if in cattle breeding and other branches of rural industry, farmers were to attend more strictly to what is known, and be governed less by surmise, whim and prejudice, there would be no occasion for the observation we so often hear, to wit: That in agriculture there is less real progress in improved and scientific methods than in any other department of industrial art.

It has been said by a very respectable authority that we have no such thing as science in breeding—that our stock has been brought to its present condition of excellence by the exercise of the taste, or mere fancy of individual breeders; and that this important field has been entirely neglected by the animal physiologist and the student of kindred sciences. Indeed, it must be admitted that notwithstanding the great mental activity of the last half century, very little has been accomplished for the profession of agriculture, if we except what we owe the mechanic for the invention of labor-saving machinery, and implements for cultivating and harvesting our crops, and preparing them for the market; to which may be added the improvements which the observation and experience of practical men have developed in the breeding of domestic animals. In methods of culture, knowledge of the character of soils—how to maintain and increase their fertility—it is surprising how little has been done, and especially how little the mere scientist has done to aid us. In reference to the great industrial art this association was organized to promote—the breeding and care of domestic animals—it is unaccountable that learning and science have done no more. While in regard to the composition of the earth's crust, the origin, history and modification of species, races and varieties of animals, we have had a great deal of careful and laborious investigation by men of eminent scientific attainments, these labors seem to have been, for the most part, expended much more in the interest of abstract science than of practical utility. Rocks and earths have been explored to determine the order and age of the different formations, rather than the uses and value of the material composing them. And, in like manner, it must be confessed that the study of the history and habits of animals has been prosecuted with diligent industry, in some quarters, with no other purpose, as we infer from the results, than to determine questions, practically unimportant, in regard to the number of species originally created, if any—or whether, like Topsy in Uncle Tom's Cabin, they did not all "just grow!" It is possible that some writers are too sanguine in their anticipations of results yet to be accomplished by science in this department. It may be, and I think is true, in regard to some questions involved in our art as observed by a foreign writer, that "Where we strive to throw light, the light does but reveal to us the spectres of our own ignorance, and all that we carry away from the vain attempt is a renewed consciousness of our own weakness and indigence." While, therefore, it must be admitted that mere speculative scientists have heretofore accomplished very little in aid of this branch of agricultural industry, it is nevertheless true that considerable progress has been made in establishing systematic methods founded on the careful observation of facts and intelligently conducted experiments. And it must certainly be conceded that by reason of the rapid increase of scientific knowledge and its wide diffusion, the mass of intelligent people are much more competent to collect and arrange facts in reliable form, than at any former period in the world's history. There is, in our investigations, less guessing, less mere fancy and whim, less prejudice, and a more general determination to get down to the "hard pan" of actual fact, than ever before. And, Mr. President, if we who claim to be breeders of model and specimen cattle, designed for the improvement of what have been called "the rank and file" of farmers' stock, resolved to be governed by this commendable spirit of impartiality and thorough truthfulness in our proceedings, and bring to our work minds trained to habits of study and systematic investigation, we shall escape losses and disappointments, which follow attempts to accomplish impossible improvements and practices which experience has shown to be erroneous. It is most unfortunate that our business is not conducted upon a more intelligent understanding of the facts established by the observations of experienced breeders, and the principles deducible from these facts. As it is, we are at sea upon almost every question that may be suggested, and there is scarcely anything that can be said to be settled. Hence it is that the beginner is left to his own whim or fancy; and the products of his crude practice seem to be as highly appreciated as the fruits of the labor of the skillful breeder who has devoted a life to the profession! My purpose on this occasion is to direct attention to a few principles that ought to be regarded as elementary in our art, and in reference to which there ought to be no diversity of opinion, in the hope that our discussion may result in a more correct understanding of these principles and their application in actual practice.

The great principle that the characteristics of parents are inherited by the offspring, that "like begets like," the discovery of which, or at least its application in breeding domestic animals, has been attributed to Bakewell, has doubtless been understood by civilized people in all ages. In the light of modern investigation, this principle may be defined as follows:—In nature each species brings forth after its kind, in obedience to the great decree—"Let the earth bring forth the living creatures after its kind, cattle and creeping things, and beast of the earth after his kind." Within the species, we have races or breeds that are more or less constant in transmitting their peculiarities, depending on the antiquity of the variety, uniformity of food, climate and other conditions. But in addition to these illustrations of this principle, we have what is more immediately applicable to our subject, to wit:—The inheritance of qualities by the offspring from its parents. Here, though the qualities of the sire and dam are generally observed in the produce, it is not universally so. Sometimes we have a reproduction of the grandsire or grand dam, or of more remote ancestors. But as the rule that "like begets like" controls, not only in the transmission of the characteristics of the species and the race, but also of the individual ancestors, and especially of the immediate parents, the importance of selecting breeding animals, which, besides being of the approved race, shall be descended from animals possessing the excellence we seek to produce, cannot be over estimated. The progeny inherits the outward form, size, color and quality, good or bad, of its ancestry; and, also, though, perhaps, with less certainty, artificial habits and conditions. The produce of unthrifty and "runted" animals will not be as good "growers" as those from parentage that have been kept in thriving condition. And so, cattle that are over-indulged in "luxury and ease," will be less likely to produce a hardy and vigorous progeny, than those that have had proper air and exercise, without such over-indulgence. A cow with the first calf, being milked irregularly, and dried off in four or five months, becomes a poor milker, and the habit will be likely to influence, to some extent, the milking quality of her daughters; and if continued for several generations, will become an established characteristic. All intelligent efforts for the improvement of domestic animals have been founded on two principles, to wit:—1st. The selection of the best animals to breed from; and 2nd, proper feeding and care for the development of the highest excellence. These principles were acted upon in a rude way at the very beginning of the history of races and breeds; and important and indispensible as they must have been, in the improvement of mixed and inferior sorts, and the building up of the improved breeds, their observance is equally essential to the preservation of the valuable characteristics of our most perfectly developed races.

To be Continued in our Next.

Losses on Stock from Injudicious Wintering.

I have repeatedly urged farmers who make little or no provision for properly wintering their stock, in the way of food and shelter, to change their shiftless, ruinous management, and adopt a course that would be at once profitable and creditable, and a source of pleasure, instead of the dreadful annoyance to which they are annually subjected, resulting simply from palpable mismanagement. I am happy to say that I have here and their prevailed, and induced some having no shelter to build stables, and those who were in the habit of compelling their stock to shift for themselves in winter, "root hog or die," often occasioning a loss in condition so great that all profit derived from the stock surviving such neglect would scarcely make good the loss. Strange to say, in many localities, and over large areas in this country, this mismanagement has been the rule, generation after generation, and thousands of extensive stock keepers are still practicing this ruinous policy, and have been for twenty years or more. The extent of the loss growing out of a want of shelter and of a full supply of proper food, in winter, I have never been able to ascertain so definitely as of late. The loss of weight on animals, bovines and sheep, according to statements made by the owners of stock themselves, range from five to forty per cent. In Maryland it is from five to fifteen per cent.; in southwestern Virginia, from ten to forty per cent. The depreciation of the animals is most marked in southwestern Virginia, North Carolina, South Carolina and the rolling portions of Georgia, where, in numerous instances, it is reported to have reached fifty per cent. I spent a portion of one winter, some years since, in southwestern Virginia, and am confident that I saw both cattle and sheep in market that did not weigh half what they did when I saw the same animals some four months previous. I did not find one per cent. of the farmers stabling their cattle, and not ten per cent. of them fed them so that the animals did not suffer seriously with hunger; and I saw numerous places where cattle, horses and sheep all suffered for water for several weeks at a time. A small per centage of the stock keepers are every year improving their management, building shelter and stables, and making better provision for feeding than formerly, but I am sorry to say that a very large proportion of them still allow their animals to suffer for food and shelter, and, as a consequence, they do not make a tithe of the profit on their stock that they would with proper management. Stock men, look to your interest, and do not defer it; now is the time to provide provender and shelter for the coming winter, the rigors of which cannot be endured without loss by animals without shelter and food. Do not forget to make liberal provision for admitting the sun into your stables, also pure air, at a comfortable temperature, and speedily remove everything that will detract from the hygienic condition of the stables, folds and stys. Do not build without the advice of an experienced architect.—*J. W., in Live Stock Journal.*