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Decaying substances are soon peopled with animal life, but this does not take place provided all contact with external air is prevented; nor does it result if the air to which it is exposed has been first deprived of all its germs by means of fire. It would appear as if the scientific truths which modern discoveries had brought to light were believed in with such absolute proof years ago, for Hudibras wrote:

Great fleas have little fleas
Upon their backs to bite 'em;
And little fleas have lesser ones,
So on, ad infinitum.

"Like begets like" is an axiom that cannot be disputed, and examples are continually met with showing how types are handed down from father to son, and from generation to generation; and yet, as propagation is effected by parents very dissimilar from each other, there are causes in operation which result quite as much in diversifying the race as in handing down the types from one age to another; so that we may be probably correct in saying that no single individual is the precise counterpart of one gone before. What, then, is this vital union, or rather, what is it not? It is not a merely mechanical union, like the combination of spirit and water, or the composition of the atmospheric air. It is not chemical union, which, by the combination of two substances, produces a body totally different from either of the elementary bodies, such, for example as water—the product of the combination of two gases, oxygen and hydrogen.

Vital union is probably partly mechanical, and slightly analogous to chemical union, but differing materially from either—undoubtedly *sui generis*. Each parent possesses certain peculiarities, but by no means in equal proportions; and there are no fixed rules enabling us to judge precisely what the effect will be of certain combinations, but yet there are certain truths, or rules, although abounding with exceptions, which careful observation has detected and recorded. Of these the first in importance is the influence exercised by either parent on the offspring. When the influence of one is greater than the other, the term prepotency is used to denote the superior influence. And although this prepotency may belong to either parent, yet in the majority of instances, so far as external form goes, it belongs to the male. This is partly owing to the fact that the vital functions, the internal frame, and the central and nervous systems, which are unseen, more frequently follow the female; whilst the more visible features, such as the external form, the skin, the back, and hindquarters, the size and general shape, are generally influenced by the male parent.

Sometimes the very opposite is the case, and then the female is said to be prepotent. (Illustrations of the truth of the above remarks were then given by the lecturer, in cases where the male animal was superior in size and weight to the female, in horses and sheep of different breeds, in cattle, and the Manx cat.) In the human race a tall family was often the progeny of a tall husband and a short wife. Sometimes the opposite alliance produced the same result, and sometimes part of the family were tall and the other part short; but it is scarcely ever the case that a mean or average size resulted from the union of parents of opposite stature. That the constitution, temper, and mental condition more frequently follow the female parent, is generally acknowledged; and it is considered as essential to the production of a clever family that the mother should be distinguished by mental gifts. It is well worthy of notice, the astonishing manner in which peculiarities and predisposition to disease are propagated, although such predisposition may not manifest itself till a good portion of a lifetime is passed away. An hereditary disease or peculiarity appears perhaps at about the age of fifty, and not before, and yet the germ of predisposition inherited from the parent must have existed all this period. (The lecturer then proceeded to speak on reversion, a term which, he remarked, was given to that well-known phenomenon of certain peculiarities disappearing in one generation and reappearing in the next, or subsequently.)

It was the fact that, with animals when the first cross had proved eminently successful, a continuation of the cross bred animals has by means of reversion caused all sorts of incongruous results to crop out, so as greatly to disgust the would-be improver. So strongly has this been felt by many breeders that they have condemned crossing altogether except for purposes of the butcher, or confined to the first cross. Indeed, at one time this was the leading doctrine of the most prominent men belonging to our agricultural societies, who clung with superstitious tenacity to the doctrine of purity of blood, believing it to be the ark in

which alone true safety was to be found. Time was when prizes were only given to three breeds of sheep, supposed to be pure.

CROSS BREEDING.

Now what do we see? Improved Hampshire Downs, Shropshires, New Oxfordshires, and others, all from cross-bred parentage, but now recognised as distinct breeds, and all considered worthy of prizes and of encouragement. These breeds may be considered as the successful results of crossing, scientifically and practically carried out, and although no doubt, contemporaneously with these successful examples, many others have been made which have ended in failure, yet we cannot shut our eyes to the fact that new and distinct breeds have been thus created, and have been so perfected by rigorous weeding that they require no further crossing, but only careful selection, and may now justly take rank as distinct breeds. Although there was no reason to doubt that the Southdown is a pure breed, greatly improved by selection, yet the Leicester breed was raised by crossing in the first place. It was as essential to have the best and purest parentage on the one side as the other. The Hampshire and Wiltshire Downs originally were large, bony, uncouth sheep, with horns, which latter were got rid of by means of Sussex rams, but still remained a very useful though coarse sheep, till Mr. Humphrey commenced his improvement some thirty years ago by means of two of Mr. Jonas Webb's prize Southdown rams, from which were descended all the rams he afterwards used or let, although he replenished his flock and maintained his size by occasional purchases of ewes. This improvement has been carried out with the greatest success by Mr. James Rawlence and others. The Oxfordshire breed is the result of the cross of the Cotswold ram with the Hampshire Down ewe. The Shropshire is indebted to both Southdown and Leicester for the improved breed of sheep recognized under this name. Thus, without disparaging the efforts of those who have devoted their attention to the improvement of pure breeds, whose exertions were worthy of the highest praise, yet all must acknowledge the great success that has attended the establishment of the breeds he had mentioned. Indeed, he considered that more skill and more science had been shown by the breeders of sheep than by the breeders of any other kind of animals. A certain want had been felt, and breeders set about to supply the want, whether it was greater size, earlier maturity, or larger or finer wool; and when the want was supplied and the breed established, further crossing had, for the most part, been discontinued. The Royal Agricultural Society, not leading, but falling in with the improvement, greatly aided and extended the movement. But whilst this was the case with sheep, it was far otherwise with horses. With the exception of cart horses, the breed of which had certainly been greatly improved by the encouragement given by the Royal and other societies, he considered that other useful breeds would have been better if these societies had never existed; but to this he would refer again before he concluded. Crossing had been adopted with great success with pigs, for, although certain distinct breeds had long been known, such as the Berkshire, Yorkshire, and Sussex, yet it would be somewhat difficult to give a correct nomenclature to all the different breeds. The Royal Society have long since fallen back on the distinction of "large and small," "white and black" pigs.

Conclusion next month.

SOMETHING NEW.—Canadian millers are importing wheat very extensively in some quarters from Chicago and Milwaukee. One miller in Goderich recently had laid down to him 70,000 bushels at from \$1.45 to \$1.10 in gold. The Galt Reporter notices similar importations at that place. The millers in Galt are bringing in wheat to a large extent from Chicago, and the same thing is noted in most of the milling towns and villages in Ontario. It must certainly be looked upon as one of the strange eccentricities of trade, when we find that wheat can be bought in Chicago, and laid down in Galt, at a cheaper rate than it can be bought in Western Canada, but it seems to be a fact nevertheless, and seems to hold out but little prospect for an advance in the price of this important cereal.

American Papers.

It is quite astonishing to us to see the immense number of really superior, handsome, large and well-written agricultural papers published on the other side of the lines, especially when we compare a few of which are kindly sent to us. We now name a few of them:—The Country Gentleman, Moore's Rural New Yorker, Maple Leaves, American Farmer, Agriculturist, Bee-Keeper's Journal, Carolina Farmer, Country Gentleman, Deeter's Experimental Farm Journal, Farmer's Garret, Georgia Farmer, Gardner's Monthly, Hearth and Home, Horticulturist, Prairie Farmer, Rural American, Rural Gentleman, Stock Journal, Western Farmer, Scientific American. From these we occasionally quote valuable remarks which may be of use to us. We are advised not to labor so hard ourselves, but to select from the labors of others. We intend to keep space enough in our paper for all Canadian writers who may favor us with any useful communications, and then select from our exchanges those articles which we think of most advantage to our readers. We now can give you article 84 on "Walks and Talks on the Farm," from the American Agriculturist:—

WALKS AND TALKS ON THE FARM.

The Deacon was appointed one of the judges on implements at our County Fair. One of his associates failed to appear, and he got the President to appoint him in his place. "It won't take you more than an hour," said the Deacon, and so I consented. It took us two whole days—and hard work at that! We had to judge everything—from a churn to a steam thrashing machine. There ought to have been at least three committees; say, one on implements for cultivating the land, and for sowing seeds and manures; another, on implements for harvesting, including reapers and mowers, rakes, tedders, loading and unloading apparatus, corn huskers, potato diggers, etc.; and the third, on all other articles not included in the above. This would divide up the work and give us time to do justice to the exhibitors and to the public. As it is, our decisions are a farce. There were half a dozen potato diggers on the ground, one here and another there, and we walked from one to the other, and tried to make up our minds which was best. Then a man came to us to say that he had a potato digger in Mechanics Hall that he was exceedingly anxious that we should examine. There was no opportunity for a field trial, but this man had got two or three quarts of soil spread out on a plank and was running his machine, or rather a model of it, up and down the plank to show how splendidly it would work. This was the only "trial" of potato diggers we had. We hit on a very ingenious way of coming to a decision. We threw this one out because it was only a model; then another because it was too complicated; and then another because it cost too much; then another because we did not like the looks of it; and so on until there was but one left, and to this we awarded the prize! When we came to the reapers and mowers, separate and combined, we found half a dozen of the most celebrated machines, which we were asked to look at and say which was the best. We gave it up; and went to the managers and told them that it was impossible for us, in the short time we could spare, and without actual trial in the field, to decide as to the relative merits of these machines. "But," they said, "we have offered a prize and you must award it to some one." "Can't you agree?" asked the Secretary. "Oh, yes," we replied, "we all agree that, under the circumstances, it is impossible to make any satisfactory decision." "Well," said the President, with a merry twinkle in his eye, "is not one of them painted a little better than the others? Give that the prize." Seriously, this whole subject of awarding prizes at Fairs requires attention.

At the fair a young man from New York was distributing the Rural New Yorker, and gave me a copy. In it I found some remarks from Dr. Randall, the distinguished advocate of American Merinos, in regard to the "herd-

ing" qualities of long-wooled sheep. Between you and me, the remarks I made on this subject and which led to this discussion, had no more reference to Dr. Randall than to the man in the moon. I was speaking of a remark actually made to me by a farmer of this county, who gravely assured me that I could not keep over two or three dozen Cotswold sheep in one flock. I pronounced this idea sheer and unadulterated nonsense. But I did not then know that any one so distinguished as Dr. Randall entertained such an idea, while it turns out that he is the father of it, and that my neighbor was only repeating what he had learned from the teachings of the Doctor. Of course I will apologize. I used the words "sheer and unadulterated nonsense," in a Pickwickian sense. And now let me ask the Doctor why long-wooled sheep will not "herd" well. He does not tell us why. We infer that he thinks the length of the wool has something to do with it. "Merinos, with short wool," he says, "herd well; Southdowns, with medium wool, not so well; and Cotswolds, Leicesters, and Lincolns, with long wool, not at all." The Doctor should explain why.

But seriously, I suppose the truth of the matter is this: The improved long-wooled sheep will not bear neglect as well as the unimproved Merino. But will one of Mr. Hammond's choice, high-bred, "improved" American Merinos stand neglect any better than a Cotswold or a South Down? Will it do any better on low, wet land, or on coarse herbage? Will it thrive any better on a fermenting manure heap? Instead of telling farmers that improved long-wooled sheep will not bear "herding"—that they cannot be kept in large flocks—it would be better to tell them that they will not bear neglect, starvation, and generally bad treatment, as well as common Merinos. This would be true, and it is true of all improved animals, or for that matter, of all choice varieties of plants, seeds, and fruits. If Dr. Randall uses the term "herding" in this sense, I quite agree with him; but it would be much better to use some other term, as this one conveys no distinct idea—or if it does, it is an erroneous one. It confounds cause and effect. Some one will be telling us by and by that Shorthorns and Devons will not "herd" as well as the Texas cattle—and there would be just as much sense and meaning in the term as there is when it is said that Cotswolds will not "herd" as well as Merinos.

On Mr. Lawes' farm at Rothamstead, the first winter I was there, one hundred and twenty Hampshire Down wether lambs were put "on the boards," under a thatched shed, about the first of October, and never taken out till they were ripe for the butcher; and to the best of my recollection the whole lot, at about a year old, averaged twelve stones, or 90 lbs. dressed weight each. I forget the exact size of the shed, but should say it was about ten feet deep with a feeding trough in front; and that the length of the shed was only a little more than was necessary to allow each sheep to stand at the trough and eat. Never did sheep do better. "Ah, but," I hear the Doctor reply, "these were Hampshire Down, and this breed 'herds' better than the Cotswolds." But all that need be said in reply to this is that Mr. Lawes' celebrated experiments on the "fattening qualities of the different breeds of sheep" were made in similar sheds, and that that the Cotswolds not only remained healthy, but gained much more than any other breed. Can you keep a greater weight of carcass in one of these sheds with Merino sheep than with Cotswolds, and will they stand this kind of "herding" any better? Ask Jurian Winne. He feeds about a thousand sheep every winter, long-wooled and Merinos, and keeps them in close quarters, and the long-wooled do better than the Merinos—or at any rate, he says he can make twice as much money in fattening them as he can from the Merinos. But mark you, Mr. Winne gives his sheep the best of care and attention, and this is all there is to the question. If they have the necessary food, given regularly and so distributed that each sheep can get its due proportion; if their apartments are kept well ventilated, and free from all fermenting manure; long-wooled sheep will "herd" just as well or better than Merinos. Small flocks are desirable simply because of the greater ease of attending to these particulars.

The great secret of success in the winter management and fattening of sheep is to attend to them yourself. A hired man who will feed at a given hour every day, and in accustomed order; who will exercise a little judgment as to the amount required—feeding