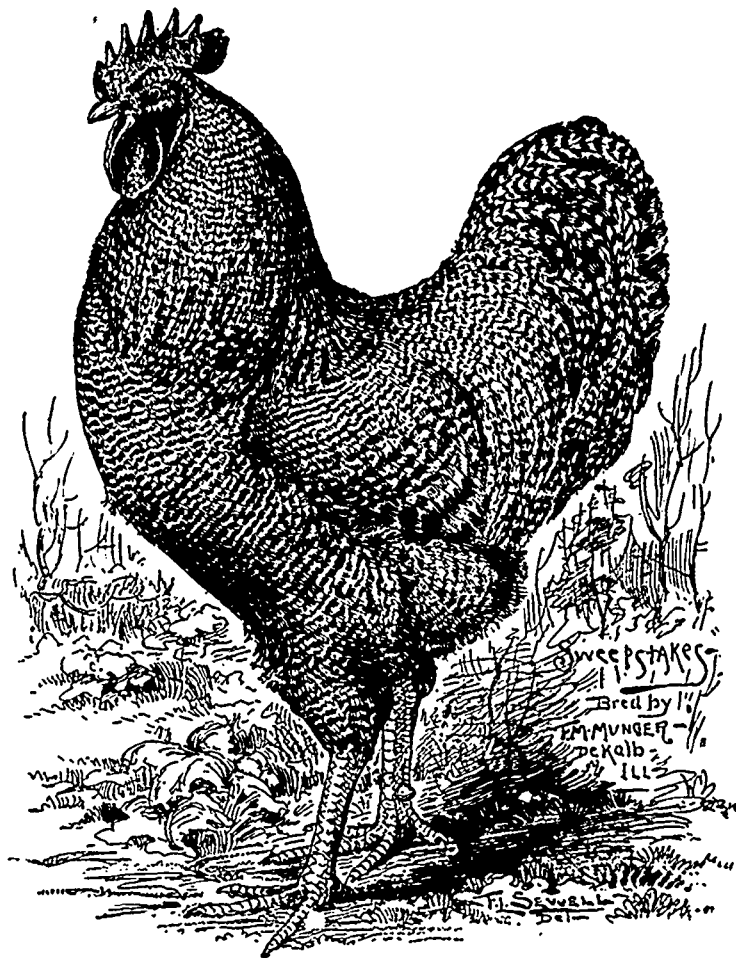


sang together and the sons of God shouted for joy." By others it is supposed to be due, at least in some degree, to the power of environment, the changes of climate and soil, of more or less abundant food, the necessity of obtaining sustenance, and the like. By still others, those who follow the teachings of Prof. August Weissmann, it is referred to the union of the male and female cells, which may unite in various ways so that sometimes the male and sometimes the female elements preponderate, and so, as in a chemical reaction, the different proportions produce widely different results. If, as it is said, a common shirt and a lump of sugar are chemically composed of the same elements differently combined, it need not be surprising that diverse combinations of the male and female elements should produce variations, some of which may be striking in amount and character.

But what are the causes of variation? The fact is of the greatest importance to poultry breeders; it is his sole hope of improvement. If there were no variations, if the character of breeds and varieties were absolutely fixed, then the breeder would have the problems of mating simplified to the mere union of sexes; the skill that comes from study of a breed or variety would be useless, and a lad of ten would be as competent a breeder as the veteran who had made breeding a life-study. Like would produce like; the young would be just as good as the parents and no better; one fowl would be the exact counterpart of another; improvement would be at an end; poultry exhibitions would perish; poultry papers would die; poultry breeding would lose its charm; the fowls which were raised would be raised purely for commercial purposes. If there was a profit in raising eggs or poultry, fowls would still be raised for the profit, but all the fascination which attaches to



PLYMOUTH ROCK COCKEREL "SWEEPSTAKES."
Bred and Owned by F. M. Mungler, De Kalb, Ill.

thoroughbred fowls would cease. The breeder, and rightly, aims to so fix the qualities of his stock that the progeny will be uniform. He desires from 95 point birds to raise all 95 point chickens. But if this purpose could be attained it would defeat itself, and his success would be transformed into a lamentable failure. It is well to remember this when matings go wrong, as they sometimes do with the best breeders. When instead of a lot of exhibition specimens a yard full of culls are produced, when in place of the desired fixity of character the fowls are found to be in a state of flux, for this disappointment rests upon the only foundation that makes a fancy possible, the tendency to vary.

Improvement is made by selecting

favorable and rejecting unfavorable variations. The fact that they both occur puts a premium upon skill, and depreciates mediocrity and inferiority. The ebb and flow, like the wave of the sea, in our stock, makes one fowl worth a half a dollar and another a half hundred dollars. If variation makes a low price for some specimens, it makes a high price for others, and the very instability of the characteristics increases, not only the price of the most perfect, but raises the average of the whole. And so, while we labor to make permanent improvements, let us not forget to be thankful for the uncertainty which makes improvement possible, the tendency to vary, that is the foundation of the charm and the profit in poultry breeding.