VII. SOME OBSERVATIONS ON THE CHARACTERISTICS OF SWINE HAIR

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In 1924 an experiment was planned to be conducted by the Oklahoma Agricultural Experiment Station to study the inheritance of the 'swirl' in swine. It is in the course of this study that these observations are being made. The primary purpose of this investigation is to determine the differences, if any, between normal hair and the 'swirl' hair. Since it is only begun, this report is merely introductory. Hausman (1920) has given attention to the characteristics of mammalian hair, and Kidd (1903) has called attention to the direction of hair.

Samples of approximately 160 hairs each were clipped from four different Poland China sows that are being used in the 'swirl' study. Two samples have been taken from each individual, one from the shoulder slightly to the left of the median line, and the other from the coupling at the junction of the lumbar and sacral vertebrae, which is the point where the 'swirl' under study is located.

The diameter of each individual hair has been measured with a Brown and Sharpe measuring instrument and read in ten-thousandths of an inch. These measurements were made midway between the base and tip of the hair. There was considerable variation in these measurements which should be expected because the samples were taken late in the spring and a new growth of hair was observed to be in progress.

For the Poland Chinas, the mean diameter of the shoulder sample varied from 49.06 to 77.5 ten-thousandths of an inch, and the coupling varied from 64.29 to 91.8.

The mean diameter for the Duroc Jerseys ranged from 50.6 to 79.2 for the shoulder, and from 55.38 to 86.2 for the coupling. It is of striking interest to note that the mean diameter for the coupling samples is greater than it is for the shoulder samples except in one case, that of a Duroc Jersey gilt (No. 60). In this case the mean diameter of the shoulder sample was 7.5 ten-thousands of an inch greater than for the coupling sample. The probable errors are small, being less than one in all these cases.

It is also of interest that larger hairs were found at the coupling than at the shoulder. A few samples from the side and hams were measured and these measurements show the same trend that is evident in the shoulder and coupling measurements. This trend suggests that the hair is larger on the posterior part of the body in swine than on the anterior.

It appears from these observations that swine hair continues to increase in diameter until the animals reach maturity. This is suggested because the larger means were found for the older animals and the smaller means for the younger individuals.

Only a few hairs were found that could be called straight. The hairs tend to curve. This is exactly as expected, because where these samples were taken the hairs bend backward and downward beginning at about one-fourth their length from the base. All of the bending hairs were somewhat flattened. This was decidedly characteristic of the curly hair. Curly hair showed a marked tendency to twist which gives the individual hair a spiral-like appearance.

Although these observations do not furnish sufficient data at present to justify conclusions, it is of interest that among the Duroc Jerseys, the larger hairs were more highly pigmented. This may not be generally true but certainly was evident in this preliminary study. Hausman (1924) has shown that the pigment granules of hair are located in the cortex of the hair shaft. If the coarser hairs in Duroc Jerseys are, as a rule, more highly pigmented than the finer hairs, it may be that the coarser hairs among the black breeds of swine are also more highly pigmented. This will be studied further to determine if it is true.

Literature Cited

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