1994

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been, but it must he by concentration and selection of the best types for the purpose on both sides of the ancestry. WHAT HELP DO THE NEW VIEWS GIVE ?

The more important of the theories recently advanced are those of Weismann, whose study of the germ cells led him to the conclusion that acquired characters cannot be transmitted. He has stated that even the apparently powerful factors in transformation-the use and disuse of organs, the results of practice and neglect-cannot now be regarded as possessing any direct transforming influence upon a species, simply because they cannot reach the germ cells, from which the succeeding generation arises. Professor Cossar Ewart says : "There are three kinds of variations, (1) the variations inherited by each parent from its immediate ancestors; (2) the new variations, when the male and female germ cells blend during fertilization; and (3) the variations or modifications produced by the environment during development and growth. The first two kinds of variations are heritable; the third-i. e., the non-germinal variations-are non-heritable, and are hence of no use to the breeder." This, if correct, would appear to limit the breeder's scope as hitherto understood; though, as already stated, it is believed that the power to alter type is limited.

Mendelian views are that characters are dominant and recessive, and this would seem to confirm the results of breeding, as the dominant character can only be established by observation as to its power. Older breeders dealt with this principle under the name of prepotency; so that the chief value of the Mendelian system would seem to be the power of hybridizing, which is a doubtful advantage when a large number of old-established breeds are already in existence. None of the new theories seem at present to simplify the task of the breeder in maintaining merits and making them more certain of transmission, though it may be that they will ultimately prove helpful.

VALUE OF OLD PRINCIPLES.

In the meantime, agriculturists will be well advised on the lines they so thoroughly understand, to maintain and perpetuate the many fine breeds that have



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Good Reasons Why



of like power?

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