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REVIEW OF NEW EDITION
OF USSR AGRICULTURAL ENCYCLOPEDIA

V. S. Dmitriyev

The first volume of the new third edition of the agricultural encyclopedia has been published. The third edition will include more than 2,000 articles as compared to 1,200 articles in the previous edition. A considerable number of articles for the encyclopedia were rewritten following the decisions made by the August 1948 session of the All-Union Academy of Agricultural Sciences imeni Lenin and the adoption of the Stalin Plan for the Transformation of Nature.

The first volume, which includes the letters "a - ye," contains about 500 articles. In comparison with the previous edition, 35 articles have been omitted and 202 rewritten.

In Soviet scientific literature, agronomy is usually understood not only as a science dealing with laws concerning field cultivation and farming, but also as a scientific basis for agricultural production. Consequently, the core of the agricultural encyclopedia is agronomy.

The article "Genetics" by Lysenko, in the first volume, can serve as a pattern for scientific articles published in the encyclopedia. It presents a short definition of genetics as a branch of biological science dealing with the development of organisms. It also points out that genetics is also a branch of science studying heredity and its variations.

At present, there are two sharply contrasting schools of genetics. According to Lysenko, the first school of genetics is Mendelism-Morganism, which recognizes in the organism a certain germ plasm which differs from the rest of the body and is concerned only with heredity. Changes of the germ plasm (mutations) occur as if they were completely independent of the body organism. Thus, changes of germ plasm and hereditary variations do not depend on the surrounding environment. For this reason, no new qualities or characteristics are acquired by the organism due to its environment.

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The new type of genetics begun by Michurin refutes this basic position of Mendelism-Morganism genetics. Michurin's teaching does not accept the idea that any hereditary qualities exist separately from the body of the organism, but believes that the basic characteristic quality of a living body expresses itself in the ability of the body to live, nourish itself, grow, and propagate according to its nature. Hereditary changes of a given organism, or hereditary changes of a part of the body, always appear as a result of changes in the body itself. Body changes are caused by changes in assimilation and dissimilation and changes in metabolism. Changes of organisms or of their parts and qualities are not always transmitted to offspring to a full degree.

Yet, changes of the embryo of new organisms are always the result of changes of the parent organism and a result of direct or indirect action of the environment upon the development of the organism or its separate parts. Hereditary changes and the acquisition of qualities and their intensification during the course of subsequent generations is always dependent upon environmental conditions. Hence, only by directing life conditions and the development of plants and animals is it possible to understand their nature more fully and thus to find ways of changing them into the varieties needed for agricultural practice. In this way, the basic positions of the old and new genetics are in contrast.

Volume I contains a series of articles which expound the most important biological and agricultural scientific theories. The articles concerning agrobiolgy, agricultural practice, acclimatization of plants, botany, biochemistry, veterinary science, and others show the outstanding achievements made by Soviet agrobiological and agronomical sciences.

One of the articles, by V. N. Stoletova, is entitled "Agrobiology." Pointing out that this science concerns general biological laws for farming, the author writes: "In its investigations, agrobiolgy proceeds from Darwinism as a general, natural, and historical theory concerning the development of the organic world; but it does confine itself to Darwin's teachings. Darwin did not concern himself with definite principles of the variability of organisms; principles which are of primary concern for agrobiolgy since they form its basis. Today agrobiolgy employs both the teachings of Darwin and of Williams."

Many articles in the volume show that only Michurin agronomy answers questions on increasing the harvest of agricultural crops and the productivity of livestock. They point out that the outstanding achievements of agricultural sciences in the USSR are due to the fact that agronomy and biology are now based on revolutionary theory.

Not all the data are on a sufficiently high level. A series of articles have mistakes which indicate that they were hastily prepared. Other articles contain more serious mistakes. Two articles, "Agrochemistry" and "Agricultural Forest Conservation," are poor because of an unawareness of new techniques.

The first article, by A. Shestakov, contains no open criticism of mistakes, such as the situation resulting from the so-called "law of diminishing fertility," the misunderstanding of the role of granulated mineral fertilizers, etc. Although the author undoubtedly attempted to correct old errors of agrochemistry, he was not entirely successful. For example, he considers agrochemistry a science studying nourishment and the application of fertilizers and chemical resources for protecting plants with the aim of attaining higher and more stable harvests. The problem of food production, however, is left aside. The author states that one of the most important divisions of agrochemistry is soil chemistry, but he does not define soil chemistry. The article does not explain the basis for the system of fertilization in crop rotation, and there is no indication that this will be done in

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later volumes. Furthermore, according to the author, degraded chernozem soil is found north and not south of the chernozem zone, even though Williams long ago found degraded chernozem south of the chernozem zone. The problems of improving the quality of mineral fertilizers and of combining mineral fertilizer with organic fertilizers are not properly explained. All these errors of omission or commission greatly lower the value of the article.

The second article, "Agricultural Forest Conservation" by P. Nikitin contains several fallacious arguments. For example, the author recommends planting a mixture of tree varieties, but he does not even mention the Lysenko nest method of tree planting. Furthermore, he states that the first attempts to use trees as shelters in steppe areas were made in the first half of the 19th Century, whereas actually they were made much earlier.

One of the most important tasks of the encyclopedia is to acquaint the reader with the experimental method by disclosing all the shortcomings of metaphysics in experimental work and showing the experience of agronomists in the past. In this connection, a serious mistake has been found in the article "A Growing Method." The author, A. Shestakov, maintains that experiments on growing have led to the conclusion that the factor, or gene, being studied changes in relation to the objective of the experiment while at the same time all other conditions are maintained unchanged and favorable to the normal growth and development of plants. Williams showed that this approach was not correct since it presupposes that the factors of life not only play equal roles, but also act independently, which is contrary to the laws of nature.

Mistakes are also noticed in the articles "Harrowing" and "Plowing."

The article "Agrarian Policy in the USSR," by I. Doroshev and M. Sulkovskiy, does not contrast Soviet agrarian policy with the agrarian policy of imperialistic states. The authors do not even criticize the agrarian program of imperialistic states. Furthermore, no articles on geology are printed in the volume and the book does not have any articles about V. I. Vernadskiy and other prominent scholars.

Several articles disagree in the definition of even the most basic questions. For example, the article "Genetics" defines that science as a branch of biological science concerning the development of organisms, or as a science studying heredity and its variations. The article "Botany" defines genetics, not as a branch of science studying heredity and its variations, but as a whole science. Another definition is "the study of variation and its heredity." Such carelessness cannot be tolerated in an encyclopedia. How, for example, can one explain Stalin's classical work, Anarchism or Socialism being called Anarchism and Socialism?

Other articles show an inexcusable striving for academicism, which finds expression in describing equipment that has no practical significance. This is exemplified in the article "The Harrow," which not only described equipment having no practical significance but even calls the equipment by the wrong name.

These and other similar defects can be and should be avoided in succeeding volumes of the encyclopedia.

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