

is being provided, and there are already available a complete instrument shop and a good working library, the two necessary adjuncts to scientific research.

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THE AMERICAN BREEDERS' ASSOCIATION

THE American Breeders' Association was organized in response to a long-felt need and to satisfy a desire among breeders of animals and plants for a central agency through which these interests might work effectively in furthering their common welfare.

The objects of this organization are chiefly three: (1) to determine the laws of inheritance in animals and plants; (2) to learn the application of these laws to increasing the intrinsic, commercial and artistic values of living things; (3) to aid in bringing about this desired improvement through associated effort.

Much has already been achieved by breeders. The magnificent herds and studs scattered over North America are sufficient evidence that our animal breeders have not been idle and that they have builded wisely. The achievements of the breeders of field crops and horticultural plants have provided our modern journals and the daily press with material eagerly sought by a public which appreciates the wizard-like creations of these workers in plastic living forms. The productions of our florists and nurserymen brought forth in response to a popular demand for the artistic and novel, to the student of heredity, are monuments to the skill of the breeder and indicate the stupendous possibilities of similar work with our great economic animals and crops.

Great as have been the achievements of breeders, no definite science of breeding has been built up. Much investigation into the theory of heredity has been made and volumes of theoretical and experimental data have been accumulated through the efforts of the scientific workers. The plant breeders as a whole have their work in more scientific form than have the animal breeders. They are only on

the threshold, however, of the science of breeding. Those who have attained success in breeding have often happened upon a valuable strain or method and exploited it with good results. Many who have met with success have only a very imperfect system. Some use artistic sense, or intuition, and judgment only. Others use statistical methods almost entirely. Whatever the practise of any successful animal or plant breeder may be, he can rarely advise his neighbor as to how to proceed and assure him of success. Each has been compelled to learn by costly experience and work in the hope that he may by chance hit upon a profitable method.

It was to bring order out of this chaos of theory and practise that the American Breeders' Association was created. The first step was to organize a large central association with a low membership fee which would place it within the reach of all of these thousands of modest unheard of workers in plants and animals whose collective experience must furnish much of the data upon which to build a practical science of breeding. By means of its annual and other meetings, this association is designed to become a great school and clearing house to which will be brought the latest and best thought in breeding from these many sources, and from which a balance will finally be struck upon which to base intelligent and practical work.

The need of a national association was first felt by those who were closely in touch with breeding work and had broadly observed the field. It has been found that the methods necessary to success in breeding make it expensive. Its pursuit is often beyond the means of the average producer, because large numbers of individuals must be available with which to work and great amounts of time and care are required in handling and recording each breeding unit. The breeding of many of the commercial field crops is beyond the means of private enterprise. The breeding of animals is many times more expensive than the breeding of plants. To be most effective, large plans and cooperative effort is necessary.

The field occupied by the American Breed-

ers' Association is, therefore, unique and of the highest economic importance. The United States produces annually about \$5,000,000,000 worth of animals and crops which may be improved by careful breeding. A conservative figure, based upon the experience of those who have actually improved specific crops and breeds, justifies an estimate of 10 per cent. increase in this total by breeding alone. The cost of this improvement need not be more than 10 per cent. of the increase or one per cent. of the whole. Thus, \$500,000,000 annually may be added to the wealth of the nation by breeding, representing a profit of \$450,000,000.

Under a wise system of patent laws, invention and manufacture have been stimulated to produce and bring into wide use highly efficient forms of machinery which have greatly increased the efficiency of the agricultural producer. Through the further impulse given to better tillage and better farm management by state boards of agriculture, state experiment stations and the United States Department of Agriculture production has been greatly increased. The possible increase in the value of our plant and animal products through breeding alone is nearly as great as that now being realized through all these agencies. It is this task to which the American Breeders' Association is directing its efforts.

This work must be done by and through the practical animal and plant breeders with the aid of the scientific investigators and in cooperation with public agencies. Results can not be expected immediately, as much preliminary work must be done and years of effort will be required before permanent results can be expected in any line. Improved breeds and varieties can not be protected by patents and their further improvement thus stimulated and the breeder assured rewards for his skill and effort. In the nature of things improved strains soon become common property. The state and the national governments, therefore, should and will aid in placing this work on a substantial footing as soon as feasible plans are formulated and given adequate support.

The American Breeders' Association is at present attacking the first two of the problems before it, viz., the study of the little understood laws of heredity in living things, and the determination of such practical methods as can be applied in the actual improvement of plant and animal forms. This work is being centered in committees of from three to seven members, who are leaders along the lines for which they are chosen. Such problems as the business side of animal breeding, breeding meat-producing animals, the business side of plant breeding, breeding sugar crops, fiber crops, forage crops, cereal crops; breeding swine, breeding carriage horses, running horses, trotting horses, draft horses; breeding insects and bees, breeding fruits, breeding ornamental plants; breeding for the dairy, breeding general purpose cattle; the scientific investigation of the theory of heredity are taken up by the committees adapted to each subject. These committees report to the association at its annual and other meetings on the progress of their work and will make such recommendations to the society as they find wise and expedient. In this way the energies of the association will be centered upon the specific problems before it, while each committee has the resources of the entire membership to aid in its work.

The American Breeders' Association built up a membership of about one thousand, one hundred of whom are life members. This membership includes the foremost animal and plant breeders and scientists of this continent and many abroad. It has published five annual reports, a neatly-bound 400-page volume, containing the papers and addresses presented at the annual meeting and the records of the meeting.

W. M. HAYS,
Secretary

WASHINGTON, D. C.

*THE INTERNATIONAL CONGRESS ON THE
EDUCATION OF CHILDREN AT HOME*

THE Third International Congress will be held under the patronage of the Belgian government, in connection with Universal Exposition at Brussels in August, 1910.