main method, it is believed, whereby the higher organisms, plants and animals, have developed from simpler ones. These chromosomes and their contents, in fact, furnish the basis of evolution, the development of our whole organic world.

So much preliminary to a recent study made upon the chromosomes of the flax plant by Charles Ray, Jr.[1] The cultivated flax plant has 15 pairs of chromosomes or 30 total in each cell. And so each ripe pollen grain has 15, and each flax egg has 15, chromosomes. The fertilized egg thus has 30 chromosomes and this continues in all the cells as the plant grows.

Most of us know flax only from the cultivated kind which certainly shows much variation among the different varieties. It is surprising to learn that there are about 100 kinds or species of flax in various countries. There are about 25 species of wild flax in this country of which three are found on the prairies of North Dakota. Our cultivated flax, as stated, has 30 chromosomes (15 pairs). The wild Lewis flax of North Dakota, with blue flowers, has 18 chromosomes, 9 pairs. In his report on 36 flax species, Ray judged that half of them carried 18 chromosomes while 8 flaxes had 30. It is possible sometimes to see how species may have arisen from more primitive plants by chromosome studies but not much was revealed by the work done by Ray.

From a study of the chromosomes of common wheat it appears that this most valuable food crop likely arose from a cross, probably a natural one, between an emmer-type wheat and a wild grass related to the wheats, later to be improved by selection and crossing through thousands of years to form our fine wheats of today. Common wheat has 42 chromosomes, 21 pairs, which makes a complicated system. Very recently Sears[2] of the Missouri Experiment Station has constructed a "common wheat" by crossing the "timopheevi" wheat (an emmer with 28 chromosomes) with the scaly aegilops (a wild grass with 14 chromosomes). The hybrid between these two plants had $14 + 7 = 21$ chromosomes and when the hybrid was treated with colchicine, a drug from meadow-saffron, the chromosomes were made to double, $21 \times 2 = 42$, and so Sears made his "common wheat." This very brilliant piece of work shows a new epoch is opening in the forming of new varieties. Later, after many years, new varieties of wheat may be bred quite different than any we are now acquainted with.

A New Series of Perennial Grass Plots were seeded at the Station at Fargo in the fall of 1941 by T. E. Stoa, agronomist. These include Russian wild-rye, crested wheatgrass (Standard strain), crested wheatgrass (Fairway strain), green needlegrass, Fescue, bromegrass (Standard strain) and Parkland bromegrass. Stand notes taken in the fall of 1942 were recorded as O. K. for Russian wild-rye, Standard crested wheat and Fairway crested wheat; a 10% stand for green needlegrass, an excellent stand of Fescue and fair stands of the two bromes. Stand estimates made June 15, 1943 were 85% for Russian wild-rye, 60% for Standard crested wheat, 65% for Fairway crested wheat, 25% for green needlegrass, 30% for Fescue, 90% for Standard brome and 80% for Parkland brome. Especially worthy of note on June 15, 1943 was the improvement in the stands of the two bromegrasses and the sharp decline in the stand of Fescue.—[H.L.W.]

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[1]Ray, Jr. Charles. Amer. Jour. Bot. 31: 241-248. 1944.
[2]Sears, E. R. Mo. Expt. Sta. Res. Bull. 336. 1941 and later publications.