amination. In fact, the "individual" has but little to do with inheritance, nor, strictly speaking, are the characters of the individual inherited from parents or ancestors. In heredity, the individual is the **carrier** for the "germ-plasm," the physical basis of life, of which is formed the substance of the germ-cells, and by means of which the various properties of living matter are transmitted from generation to generation. In the modern science of genetics the germ-cells have acquired a peculiar and all-important significance, in that in them are borne the **factors** that give rise to the characters in the adult individual. The exceedingly minute mechanism of the sex cells is specially adapted for the marvellous processes of inheritance, as suggested by the Mendelists, whose conclusions as to the manner in which characters behave in transmission, are fully confirmed by the brilliant work of modern microscopists.

To explain the Mendelian scheme of inheritance, we can not do better than describe the experiments carried out by Mendel himself.

Experiments along these lines have been made with the most diverse forms of life—plant as well as animal. Mendel, after working upon the pea and various other plants, turned his attention to breeding and crossing of bees, but, unfortunately, has left behind no records to show with what result. Successful mating experiments with insects have been conducted by recent investigators, but in the case of the honey bee, the peculiar difficulties encountered in attempts to control mating, appear to have acted as a deterrent. However, this work is now being undertaken by several capable biologists, and the near future may hold in store for the bee-keeper some very interesting and curious results.

Mendel selected for his own special purpose the ordinary pea plant, and taking two varieties—a tall and a dwarf—he crossed them artificially with one another. The result of the crossing was a progeny that consisted entirely of tall plants—all as tall as, or even a little taller, than the tall parent. There were no dwarf plants, nor were there any intermediates between the tall and the dwarf types.

The second stage of the experiment was to sow the seeds of this hybrid tall generation. These resulted in a second generation of plants which consisted of both tall plants and dwarf plants. There were no intermediates. Numerous repetitions of this experiment have always produced a similar result, namely, that the tall plants outnumber the dwarf plants in the ratio of **three to one.**

If we cross a "pure breed" of poultry bearing single combs with a pure breed with rose combs, we find that the first generation of the cross consists of birds all bearing rose combs. This generation of hybrid rose-combs, when bred together, will give us another generation of birds of two kinds as regards the comb characters, viz., rose-combs and singles in the same Mendelian ratio of **three to one.**

Let us examine these results somewhat more closely. When we cross two forms which differ as regards a certain pair of characters—in the case of the pea, tallness and dwarfness, or in the case of poultry, rose-ness of comb and singleness—only one of the pair of characters appears in the hybrid offspring. This is called the **dominant** character, whilst the other which temporarily disappears is called the **recessive** character. At the second stage of the experiment, when the hybrids are bred together, both forms appear in the resulting generation, the **dominants** being three times as numerous as the **recessives.** Careful testing of the individuals of the second generation shows that the recessives (the dwarf peas and the single combs in our experiments) are absolutely pure as regards those characters; and also that, of the dom-