Thus, of these colours the *blues* are, on the average, considerably the earliest in flowering; then follow in order the *whites* and the *purples*, and lastly the *yellows* and *reds*. It follows that the plants included in the British flora clearly tend to arrange themselves, as regards the dates of flowering, in the order of the colours of the spectrum, the average earliest being those which are nearest the part of the spectrum where the actinic rays are at the maximum. It will be observed that the differently-coloured varieties of *Scilla bifolia* are in the same order of flowering of the plants of the same colours in the British flora. Accurate observations, continued from year to year, of the exact dates of flowering of different plants, and particularly of differently-coloured varieties of the same species, could not fail to contribute valuable data to the inquiry referring to the influence of the solar rays, in the development of the more important of the vital functions of plants in different seasons. Whilst it is quite true, as has recently been pointed out by Mr R. A. Prior in "Nature," vol. xii. p. 150, that flowers of all colours bloom in any of the spring or summer months, it is plain that it is only the method of inquiry by averages that can guide us in the search for the law or laws which regulate the seasonal distribution of colour among flowers. It is scarcely necessary to refer to the importance of this question in its possible applications in the rearing of early and late varieties of flowers and fruits.

III. *An Experiment with Turnip Seeds.* By A. Stephen Wilson, of North Kinmundy.

The seeds used in the following experiment were those of the Swedish Turnip (*Brassica campestris, rutabaga*), and were about two years old.

From a parcel were selected 100 of the largest seeds and 100 of the smallest. The 100 large seeds weighed 5·32 grains, or each seed weighed ·0532 of a grain, or 18·8 seeds weighed 1 grain. The 100 small seeds weighed 3·16 grains, or each seed weighed ·0316 of a grain, or 31·6 seeds weighed 1 grain. The large seeds stood thus to the small in the proportion of 1 to ·594.

On October 27, at 12.30 P.M., the 100 large seeds were spread over wet cotton cloth on one side of a plate, and the 100 small were spread over the other side, and all were then covered with wet blotting-paper. The temperature of the room where they stood was usually about 53° Fahr.

On October 29, at 3 P.M., seven large and six small seeds began to show their roots; at 10 P.M. of the same day forty-two large and twenty-seven small seeds showed their roots. On October 30, at 10 A.M., sixty-nine large and sixty-five small, in various degrees, projected their roots; at 10 P.M. of the same day ninety-one large and eighty-six small had pushed out their roots. On October 31, at 9 A.M., ninety-five large and ninety-three small had pushed out their roots and various proportions of their cotyledons; at 10 P.M. ninety-six large and ninety-seven small showed their radicles, while two large had wholly thrown off the skin from their cotyledons. On November 1, at 10 A.M., ninety-seven large and ninety-eight small had burst their covering and thrown out their radicles; and on November 2, at 10 A.M., the whole 100 of large and small seeds had vegetated. At this time the longest roots or stems of the large seeds were about ·48 of an inch in length, and those of the small ·32 of an inch.

It is thus seen that the first seeds vegetated in about fifty hours, and that between the vegetation of the first and last seeds there was a period of about eighty hours, giving the most vital eighty hours of growth in advance of the least vital. The large seeds took the lead in vegetating, but the small overtook them at the end.

The plate was now set aside, and the plants duly supplied with water. The wet blotting paper was allowed to remain upon them till it was carried up by the growing stems and was then thrown off. The plants continued to grow, spreading out their cotyledonary leaves more or less for two months.

During the whole time there was a most marked difference between the group in the one side of the plate and the group in the other. The plants of the large seeds took the lead and maintained their superiority to the last. Both in height of stem and in thickness the plants of the large seeds preserved a conspicuous advantage.

When some of the stems began to fall, and it appeared that little further growth was likely to take place, the two clusters were removed from the cloth on December 27 and laid aside to dry. The average height of the large plants above the cloth in the green state was 3·65 inches, and the average height of the small 2·87 inches.

Both sets of plants were dried on a sheet of paper beside each other. When about half dry they were weighed, and the large plants bore to the small the proportion of 1 to ·285. When completely dry the weight of the large was to the weight of the small as 1 to ·75. It was thus shown that the tissue of the large plants contained a greater proportion of evaporable matter than the tissue of the small, and that the tissue of the small was but three-fourths the weight of that of the large.

The lesson taught by this experiment seems to be that, other things being equal, a large Turnip seed will produce a larger Turnip than a small seed.

In looking at a drill of Turnips in any field, it is at once seen that scarcely any two plants in succession are of equal size. It can hardly be supposed that the soil and the amount of manure should vary in a distance of 9 inches; but since the size of the two bulbs differ, a possible cause of difference thus exists in the difference in original size of the seeds.

In a large seed the cotyledons are larger than in a small, and contain a larger store of *pabulum* for the young plants. But the young plant or embryo itself is larger in a large seed than in a small, and has been more liberally treated on the parent stock. The fleshy bulb of a Turnip is usually called the root, perhaps it might be more properly regarded as the stem, and it is seen by the present experiment that the stem, which is nourished by the cotyledons, is larger where the cotyledons are large than where they are small.

The writer proposes growing sets of Turnips to the full size, from large and small seeds, and will then be in a safer position to say whether it would be advantageous for seedsmen and farmers to sift out and throw away their small seeds or to sow them.